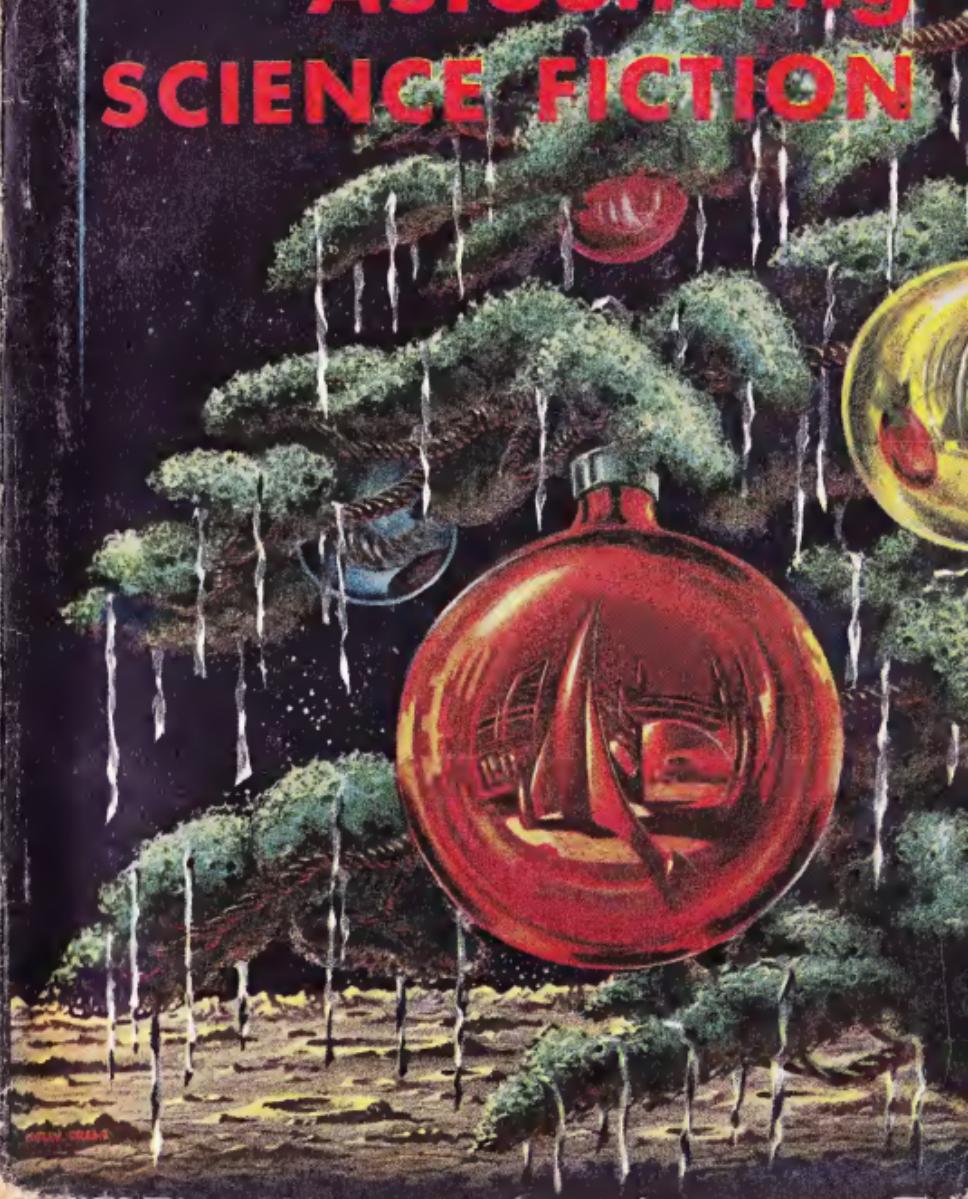




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VOLUME LIV • NUMBER 5

January 1955

## Short Novel

The Darfsteller . . . . . *Walter M. Miller, Jr.* 10

## Novelette

Field Expedient . . . . . *Chad Oliver* 79

## Short Stories

Armistice . . . . . *K. Houston Brunner* 66  
Without Portfolio . . . . . *James E. Gunn* 128  
Nothing New . . . . . *Eric Frank Russell* 140

## Article

On Atomic Jets . . . . . *J. J. Coupling* 115

## Readers' Departments

The Editor's Page . . . . . 6  
In Times To Come . . . . . 78  
The Analytical Laboratory . . . . . 114  
The Reference Library . . . . . *P. Schuyler Miller* 149  
Brass Tacks . . . . . 156

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• NEXT ISSUE ON SALE JANUARY 18, 1955 •

5

# MEANING WANTED

When a human being makes any statement about his personality, his beliefs, orientations, or desires, he's necessarily in some degree a liar. No human being is ever fully aware of all of his conscious and subliminal motivations; he can't, unless he is, make any statement of the type "I did M because of P," and tell the truth, the whole truth, and nothing but the truth.

Furthermore, it's clearly and readily observable that what a human being says bears a complex correlation indeed to what he does—certainly not a one-to-one correlation! What a man believes he does—just to make things more complex—seldom checks with what he observably does.

This statement applies to entities of the class Human Being. It includes you, me, and everyone else . . . unless there's someone around who's achieved Omniscience and isn't letting it be known.

It applies to scientists, who say sci-

ence is one thing, and *demonstrate* that it's something quite different. There are some highly interesting items to explore in that area, because science has come to have tremendous influence in our culture. And it might be worth while taking a look at what it *does* instead of what the textbooks claim it does.

Science, and the scientific method, the textbooks say, is based on facts, and that the scientist is bound, under the scientific method, to discard any theory that is contraverted by so much as one, single fact.

Science, it is also held, will weigh and study any demonstrable fact.

But there's a slight hitch here; what is meant by the term "demonstrable"? Volcanic eruptions are certainly real, though no scientist that I know of has ever demonstrated their reality in any laboratory. Science accepted the reality of lightning several centuries before enough technology had been developed to be able to demonstrate it

in the laboratory.

Quite a few phenomena we know of depend on scale so drastically that laboratory demonstration becomes a bit out of the question. Is hydrogen gas radioactive—i.e., does hydrogen undergo nuclear transformation spontaneously? Definitely yes; any time a mass of stellar proportions accumulates, a critical mass point is reached, and spontaneous radioactivity ensues.

Or so theory holds, though it has not been demonstrated, of course.

There are a good many phenomena that are accepted by science that have never been demonstrated, and probably never will be. Some take too much time, some take too much mass, some too much complexity. Science accepts phenomena which cannot be induced by man-made devices or manipulations.

*Provided* a theory correlating the phenomenon with demonstrable phenomena exists. *Fact* does not constitute the fundamental of the scientific method as it is actually used; *theory* does. No matter how vehemently the statement is repeated—check the record; a fact can be admitted to be a fact only when a theory exists which associates it with already accepted data. The *meaning* of the facts, *not* the facts themselves, can be admitted to the system known as Science.

Repeating the claim that Science accepts any demonstrated fact doesn't make it true; it simply emphasizes that most scientists very honestly be-

lieve that they act on that basis.

Most scientists do not. Don't study the textbooks on that; a statement doesn't constitute proof, however widely repeated. Check their actions-in-the-record.

Science will accept a fact as actually being a fact only when it can be correlated and organized in the existent body of understandings; until then the fact tends to be rationalized away.

Now this is not a wrong method of operation—*provided you are consciously aware of what you are doing and why*. Since Science is supposed to be “an organized body of knowledge,” obviously knowledge that can't be organized doesn't belong in the class “science” until it *can* be organized. If you file books on your shelves in alphabetical order by title, where do you file a book with the title “1, 2, 3 . . .”? Certainly a numerical title *can* be filed in an organized system—but it can't fit into an alphabetical system.

There's a lot of data, then, that is both sound and valid, *and does not belong in Science*. So long as Science claims that it has *already organized* all possible truth, it's a pompous liar.

But Science is based on the root philosophical concept or postulate “Man can understand the Universe.” The mystic operates on the postulate “There are mysteries Man can never understand.” The war between mystics and Science has forced both into a ridiculous position; the scientist doesn't

adequately recognize that there are mysteries man *does not yet* understand, because that puts him, seemingly, too close to the Mystic's position. The Mystic, on the other hand, won't admit that the Mysteries can be understood, even though he doesn't understand them, because he's a bit unwilling to admit that it can be done and he won't do it.

If Science is to consist of already organized knowledge, it must reject *as science* anything which is not yet understood. The difficulty is that there's a marked tendency to take the all-too-easy next step and say that ". . . and if it isn't scientific, it isn't a fact."

Evidence for this statement of mine? Plenty. We could start with the history of Science's attitude on "falling stars." So long as there was no place for meteors in the organization of Science, and Science knew that stars were huge and very distant, there could only be foolish popular hysteria to account for reports of "falling stars," or "shooting stars." No doubt the scientist could demand, "If what you say is true, demonstrate the phenomenon for me in the laboratory!"

Sorry; we can't do that yet . . . but we now understand how the observed facts can be related with our understandings of cosmology, so "shooting stars" can be accepted as scientific. Until the cosmology was revised, however, falling stars remained a folk-superstition, and a somewhat laughable imaginative idea of the less

highly learned ancients.

Dr. Rhine is trying very hard to get the psi effects accepted as facts—and is running into a solid stonewall opposition. Science does *not* accept; it prefers to explain away his facts. I seriously doubt that Dr. Rhine will ever succeed in getting to first base that way; Science does *not* accept facts—it accepts meanings, *organized facts*, only. When, and only when, Dr. Rhine can present an organized theory of psi phenomena, that ties those phenomena in with the already known and accepted phenomena of science, his facts will be acceptable. Until then, they are not in fact science; they're merely facts, which is something quite different.

I think it's extremely important that it be clearly recognized that Science does not, and rightly should not, accept mere facts. An *organized* body of knowledge does not exist if it's a hodgepodge of valid, but unrelated facts.

But Science is one hundred per cent solidly *wrong* in maintaining that it will accept facts, when the observable record shows that it will *not*—and should not! By denying the validity of facts until they are organized, Science suppresses a great deal of useful research. Problems can't be solved until it is admitted that they exist; if Science, with its present great prestige, denies that those not-yet-organized facts constitute real problems, it makes it extremely difficult to do competent

research on the unsolved areas of the Universe.

I'll cite just one example: the highly critical area of psionic phenomena, which appear to be very closely related to the only-recently-acknowledged field of psychosomatic medicine, and therefore to the adjacent field of psychiatry. (It's only very recently that the American Medical Association acknowledged that warts could be removed by manipulative suggestion. See "Tom Sawyer," by Mark Twain, for evidence that people had been observing the phenomenon for years, but having its validity thoroughly denied.)

Dr. Rhine has been steadily rebuffed, despite his laboratory work. I'd skip that, and take only his thoroughly documented cases of spontaneous clairvoyance-telepathy. It occurs spontaneously; it can't be demonstrated in the laboratory. And neither can volcanoes, meteorites, or the hydrogen phoenix reaction. So that disproves it? Makes the existence of the spontaneous case null and void? The falling star can't fall because everybody knows stars are too big to fall to Earth?

It's now pretty well documented as fact that native medicine men all over the Earth have death-magics that work against certain susceptible individuals. The native magicians say that the techniques do not work against white men, who seem to be immune. Duke University, on the other hand, has a different report to

make; the Duke Hospital medical and psychological staffs, NOT Dr. Rhine's group, report studies on patients brought in suffering from psychosomatic illnesses which the patient declared were hex-doctor induced. Hex-doctoring cured the illnesses, too—more rapidly and efficiently than medical and psychiatric science, incidentally. Hex-doctoring works on some white men, too.

Now it is perfectly respectable to study the action of the invisible polio virus, which detectably affects only a small minority of susceptible individuals. It is known that polio does not affect all human beings; in fact, well over ninety per cent of the race seems to have so high a resistance to the disease as to be nearly, if not totally, immune.

Why, then, is it improper to study voodoo and hex-doctoring which similarly causes serious, or fatal illness in certain susceptible, though not all, individuals?

It isn't good *Science* to study the hex doctor, because the facts can't be organized until after they are organized. And they aren't *Science* until they have already been organized and a meaning has been found. These facts, then, do *not* belong in the field of *Science*—yet.

But unfortunately, *Science* is falsely using its great, and well-earned prestige to prevent the study that would organize the facts!

THE EDITOR.



# THE DARFSTELLER

WALTER M. MILLER, JR.

*Some men insist on competing with machines — and the essence of that competition is that, like a machine, they somehow have no ability to learn new ways . . .*

Illustrated by van Dongen

"Judas, Judas" was playing at the Universal on Fifth Street, and the cast was entirely human. Ryan Thornier had been saving up for it for several weeks, and now he could afford the price of a matinée ticket. It had been a race for time between his piggy bank and the wallets of several "public-spirited" angels who kept the show alive, and the piggy bank had won. He could see the show before the wallets went flat and the show folded, as any such show was bound to do after a few limping weeks. A glow of anticipation suffused him. After watching the

wretched mockery of dramaturgical art every day at the New Empire Theater where he worked as janitor, the chance to see real theater again would be like a breath of clean air.

He came to work an hour early on Wednesday morning and sped through his usual chores on overdrive. He finished his work before one o'clock, had a shower backstage, changed to street clothes, and went nervously upstairs to ask Imperio D'Uccia for the rest of the day off.

D'Uccia sat enthroned at a rickety desk before a wall plastered with photographs of lightly clad female stars of the old days. He heard the janitor's petition with a faint, almost oriental smile of apparent sympathy, then drew himself up to his full height of sixty-five inches, leaned on the desk with chubby hands to study Thornier with beady eyes.

"Off? So you wanna da day off? Mmmph—" He shook his head as if mystified by such an incomprehensible request.

The gangling janitor shifted his feet uneasily. "Yes, sir. I've finished up, and Jigger'll come over to stand by in case you need anything special." He paused. D'Uccia was studying his nails, frowning gravely. "I haven't asked for a day off in two years, Mr. D'Uccia," he added, "and I was sure you wouldn't mind after all the overtime I've—"

"Jigger," D'Uccia grunted. "Whoosa t's Jigger?"

"Works at the Paramount. It's

closed for repairs, and he doesn't mind—"

The theater manager grunted abruptly and waved his hands. "I don' pay no Jigger, I pay you. Whassa this all about? You swip the floor, you putsa things away, you all finish now, ah? You wanna day off. Thatsa whass wrong with the world, too mucha time loaf. Letsa machines work. More time to mek trouble." The theater manager came out from behind his desk and waddled to the door. He thrust his fat neck outside and looked up and down the corridor, then waddled back to confront Thornier with a short fat finger aimed at the employee's long and majestic nose.

"Whensa lass time you waxa the upstairs floor, hah?"

Thornier's jaw sagged forlornly. "Why, I—"

"Don'ta tell me no lie. Looka that hall. Sheeza feelth. *Look!* I want you to look." He caught Thornier's arm, tugged him to the doorway, pointed excitedly at the worn and ancient oak flooring. "Sheeza feelth ground in! See? When you wax, hah?"

A great shudder seemed to pass through the thin elderly man. He sighed resignedly and turned to look down at D'Uccia with weary gray eyes.

"Do I get the afternoon off, or don't I?" he asked hopelessly, knowing the answer in advance.

But D'Uccia was not content with a mere refusal. He began to pace. He

was obviously deeply moved. He defended the system of free enterprise and the cherished traditions of the theater. He spoke eloquently of the golden virtues of industriousness and dedication to duty. He bounced about like a furious Pekingese yapping happily at a scarecrow. Thornier's neck reddened, his mouth went tight.

"Can I go now?"

"When you waxa da floor? Palisha da seats, fixa da lights? When you clean op the dressing room, hah?" He stared up at Thornier for a moment, then turned on his heel and charged to the window. He thrust his thumb into the black dirt of the window box, where several prize lilies were already beginning to bloom. "Hah!" he snorted. "Dry, like I thought! You think the bulbs a don't need a drink, hah?"

"But I watered them this morning. The sun—"

"Hah! You letsa little *fiori* wilt an die, hah? And you wanna the day off?"

It was hopeless. When D'Uccia drew his defensive mantle of calculated deafness or stupidity about himself, he became impenetrable to any request or honest explanation. Thornier sucked in a slow breath between his teeth, stared angrily at his employer for a moment, and seemed briefly ready to unleash an angry blast. Thinking better of it, he bit his lip, turned, and stalked wordlessly out of the office. D'Uccia followed him triumphantly to the door.

"Don' you go sneak off, now!" he

called ominously, and stood smiling down the corridor until the janitor vanished at the head of the stairs. Then he sighed and went back to get his hat and coat. He was just preparing to leave when Thornier came back upstairs with a load of buckets, mops, and swabs.

The janitor stopped when he noticed the hat and coat, and his seamed face went curiously blank. "Going home, Mr. D'Uccia?" he asked icily.

"Yeh! I'ma worka too hard, the doctor say. I'ma need the sunshine. More frash air. I'ma go relax on the beach a while."

Thornier leaned on the mop handle and smiled nastily. "Sure," he said. "Letsa machines do da work."

The comment was lost on D'Uccia. He waved airily, strode off toward the stairway, and called an airy "*A rivederci!*" over his shoulder.

"*A rivederci, padrone,*" Thornier muttered softly, his pale eyes glittering from their crow's-feet wrappings. For a moment his face seemed to change—and once again he was Chabrec's Adolfo, at the exit of the Commandant, Act II, scene iv, from "A Canticle for the Marsman."

Somewhere downstairs, a door slammed behind D'Uccia.

"Into death!" hissed Adolfo-Thornier, throwing back his head to laugh Adolfo's laugh. It rattled the walls. When its reverberations had died away, he felt a little better. He picked up his buckets and brooms and walked

on down the corridor to the door of D'Uccia's office.

Unless "Judas-Judas" hung on through the week end, he wouldn't get to see it, since he could not afford a ticket to the evening performance, and there was no use asking D'Uccia for favors. While he waxed the hall, he burned. He waxed as far as D'Uccia's doorway, then stood staring into the office for several vacant minutes.

"I'm fed up," he said at last.

The office remained silent. The window-box lilies bowed to the breeze.

"You little creep!" he growled. "I'm through!"

The office was speechless. Thornier straightened and tapped his chest.

"I, Ryan Thornier, am walking out, you hear? The show is finished!"

When the office failed to respond, he turned on his heel and stalked downstairs. Minutes later, he came back with a small can of gold paint and a pair of artists' brushes from the storeroom. Again he paused in the doorway.

"Anything else I can do, Mr. D'Uccia?" he purred.

Traffic murmured in the street; the breeze rustled the lilies; the building creaked.

"Oh? You want me to wax in the wall-cracks, too? How could I have forgotten!"

He clucked his tongue and went over to the window. Such lovely lilies. He opened the paint can, set it on the

window ledge, and then very carefully he gilded each of the prize lilies, petals, leaves, and stalks, until the flowers glistened like the work of Midas' hands in the sunlight. When he finished, he stepped back to smile at them in admiration for a moment, then went to finish waxing the hall.

He waxed it with particular care in front of D'Uccia's office. He waxed under the throw rug that covered the worn spot on the floor where D'Uccia had made a sharp left turn into his sanctum every morning for fifteen years, and then he turned the rug over and dusted dry wax powder into the pile. He replaced it carefully and pushed at it a few times with his foot to make certain the lubrication was adequate. The rug slid about as if it rode on a bed of bird-shot.

Thornier smiled and went downstairs. The world was suddenly different somehow. Even the air smelled different. He paused on the landing to glance at himself in the decorative mirror.

Ah! the old trumper again. No more of the stooped and haggard menial. None of the wistfulness and weariness of self-perpetuated slavery. Even with the gray at the temples and the lines in the face, here was something of the old Thornier—or one of the *many* old Thorniers of earlier days. Which one? Which one'll it be? Adolfo? Or Hamlet? Justin, or J. J. Jones, from "The Electrocutioner"? Any of them, all of them; for he was Ryan Thornier,

star, in the old days.

"Where've you been, baby?" he asked his image with a tight smile of approval, winked, and went on home for the evening. Tomorrow, he promised himself, a new life would begin.

"But you've been making that promise for years, Thorny," said the man in the control booth, his voice edged with impatience. "What do you mean, 'you quit'? Did you tell D'Uccia you quit?"

Thornier smiled loftily while he dabbed with his broom at a bit of dust in the corner. "Not exactly, Richard," he said. "But the *padrone* will find it out soon enough."

The technician grunted disgust. "I don't understand you, Thorny. Sure, if you *really* quit, that's swell—if you don't just turn around and get another job like this one."

"Never!" the old actor proclaimed resonantly, and glanced up at the clock. Five till ten. Nearly time for D'Uccia to arrive for work. He smiled to himself.

"If you *really* quit, what are you doing here today?" Rick Thomas demanded, glancing up briefly from the Maestro. His arms were thrust deep into the the electronic entrails of the machine, and he wore a pencil-sized screwdriver tucked behind one ear. "Why don't you go home, if you quit?"

"Oh, don't worry, Richard. This time it's for real."

"Pssss!" An amused hiss from the technician. "Yeah, it was for real when you quit at the Bijou, too. Only then a week later you come to work here. So what now, Mercutio?"

"To the casting office, old friend. A bit part somewhere, perhaps." Thornier smiled on him benignly. "Don't concern yourself about me."

"Thorny, can't you get it through your head that theater's *dead*? There isn't any theater! No movies, no television either—except for dead men and the Maestro here." He slapped the metal housing of the machine.

"I *mean*," Thorny explained patiently, "'employment office,' and 'small job,' you . . . you machine-age flintsmith. Figures of speech, solely."

"Yah."

"I thought you *wanted* me to resign my position, Richard."

"Yes! If you'll do something worthwhile with yourself. Ryan Thornier, star of 'Walkaway,' playing martyr with a scrub-bucket! Aaaak! You give me the gripes. And you'll do it again. You can't stay away from the stage, even if all you can do about it is mop up the oil drippings."

"You couldn't possibly understand," Thornier said stiffly.

Rick straightened to look at him, took his arms out of the Maestro and leaned on top of the cabinet. "I dunno, Thorny," he said in a softer voice. "Maybe I do. You're an actor, and you're always playing roles. Liv-

ing them, even. You can't help it, I guess. But you *could* do a saner job of picking the parts you're going to play."

"The world has cast me in the role I play," Thornier announced with a funereal face.

Rick Thomas clapped a hand over his forehead and drew it slowly down across his face in exasperation. "I give up!" he groaned. "Look at you! Matinée idol, pushing a broom. Eight years ago, it made sense—*your* kind of sense, anyhow. Dramatic gesture. Leading actor defies autodrama offer, takes janitor's job. Loyal to tradition, and the guild—and all that. It made small headlines, maybe even helped the legit stage limp along a little longer. But the audiences stopped bleeding for you after a while, and then it stopped making even *your* kind of sense!"

Thornier stood wheezing slightly and glaring at him. "What would *you* do," he hissed, "if they started making a little black box that could be attached to the wall up there"—he waved to a bare spot above the Maestro's bulky housing—"that could repair, maintain, operate, and adjust—do all the things you do to that . . . that contraption. Suppose nobody needed electronicians any more."

Rick Thomas thought about it a few moments, then grinned. "Well, I guess I'd get a job making the little black boxes, then."

"You're not funny, Richard!"

"I didn't intend to be."

"You're . . . you're not an artist." Flushed with fury, Thornier swept viciously at the floor of the booth.

A door slammed somewhere downstairs, far below the above-stage booth. Thorny set his broom aside and moved to the window to watch. The *clap, clap, clap* of bustling footsteps came up the central aisle.

"Hizzoner, da Imperio," muttered the technician, glancing up at the clock. "Either that clock's two minutes fast, or else this was his morning to take a bath."

Thornier smiled sourly toward the main aisle, his eyes traveling after the waddling figure of the theater manager. When D'Uccia disappeared beneath the rear balcony, he resumed his sweeping.

"I don't see why you don't get a sales job, Thorny," Rick ventured, returning to his work. "A good salesman is just an actor, minus the temperament. There's *lots* of demand for good actors, come to think of it. Politicians, top executives, even generals—some of them seem to make out on *nothing but* dramatic talent. History affirms it."

"Bah! I'm no schauspieler." He paused to watch Rick adjusting the Maestro, and slowly shook his head. "Ease your conscience, Richard," he said finally.

Startled, the technician dropped his screwdriver, looked up quizzically. "My conscience? What the devil is uneasy about *my* conscience?"

"Oh, don't pretend. That's why you're always so concerned about me. I know *you* can't help it that your . . . your trade has perverted a great art."

Rick gaped at him in disbelief for a moment. "You think I—" He choked. He colored angrily. He stared at the old ham and began to curse softly under his breath.

Thornier suddenly lifted a finger to his mouth and went *shhhhh!* His eyes roamed toward the back of the theater.

"That was only D'Uccia on the stairs," Rick began. "What—?"

"*Shhhhh!*"

They listened. The janitor wore a rancid smile. Seconds later it came—first a faint yelp, then—

*Bbbrroommmppb!*

It rattled the booth windows. Rick started up frowning.

"What the—?"

"*Shhhhh!*"

The jolting jar was followed by a faint mutter of profanity.

"That's D'Uccia. What happened?"

The faint mutter suddenly became a roaring stream of curses from somewhere behind the balconies.

"Hey!" said Rick. "He must have hurt himself."

"Naah. He just found my resignation, that's all. See? I told you I'd quit."

The profane bellowing grew louder to the accompaniment of an elephantine thumping on carpeted stairs.

"He's not *that* sorry to see you go," Rick grunted, looking baffled.

D'Uccia burst into view at the head of the aisle. He stopped with his feet spread wide, clutching at the base of his spine with one hand and waving a golden lily aloft in the other.

"Lily gilder!" he screamed. "Pansy painter! You fancy-pantsy bom! Come out, you sonny sonny boy!"

Thornier thrust his head calmly through the control-booth window, stared at the furious manager with arched brows. "You calling me, Mr. D'Uccia?"

D'Uccia sucked in two or three gasping breaths before he found his bellow again.

"*Thornya!*"

"Yes, sir?"

"Itsa finish, you hear?"

"What's finished, boss?"

"Itsa finish. I'ma go see the servo man. I'ma go get me a swip-op machine. You gotta two wiks notice."

"Tell him you don't want any notice," Rick grunted softly from nearby. "Walk out on him."

"All right, Mr. D'Uccia," Thornier called evenly.

D'Uccia stood there sputtering, threatening to charge, waving the lily helplessly. Finally he threw it down in the aisle with a curse and whirled to limp painfully out.

"*Whew!*" Rick breathed. "What did you do?"

Thornier told him sourly. The technician shook his head.

"He won't fire you. He'll change his mind. It's too hard to hire anybody to do dirty-work these days."

"You heard him. He can buy an autojan installation. 'Swip-op' machine."

"Baloney! Dooch is too stingy to put out that much dough. Besides, he can't get the satisfaction of screaming at a machine."

Thornier glanced up wryly. "Why can't he?"

"Well—" Rick paused. "Ulp! . . . You're right. He can. He came up here and bawled out the Maestro once. Kicked it, yelled at it, shook it—like a guy trying to get his quarter back out of a telephone. Went away looking pleased with himself, too."

"Why not?" Thorny muttered gloomily. "People are machines to D'Uccia. And he's *fair* about it. He's willing to treat them all alike."

"But you're not going to stick around two weeks, are you?"

"Why not? It'll give me time to put out some feelers for a job."

Rick grunted doubtfully and turned his attention back to the machine. He removed the upper front panel and set it aside. He opened a metal canister on the floor and lifted out a foot-wide foot-thick roll of plastic tape. He mounted it on a spindle inside the Maestro, and began feeding the end of the tape through several sets of rollers and guides. The tape appeared worm-eaten—covered with thousands of tiny

punch-marks and wavy grooves. The janitor paused to watch the process with cold hostility.

"Is that the script-tape for the 'Anarch?'" he asked stiffly.

The technician nodded. "Brand new tape, too. Got to be careful how I feed her in. It's still got fuzz on it from the recording cuts." He stopped the feed mechanism briefly, plucked at a punch-mark with his awl, blew on it, then started the feed motor again.

"What happens if the tape gets nicked or scratched?" Thorny grunted curiously. "Actor collapse on stage?"

Rick shook his head. "Naa, it happens all the time. A scratch or a nick'll make a player muff a line or maybe stumble, then the Maestro catches the goof, and compensates. Maestro gets feedback from the stage, continuously directs the show. It can do a lot of compensating, too."

"I thought the whole show came from the tape."

The technician smiled. "It does, in a way. But it's more than a recorded mechanical puppet show, Thorny. The Maestro watches the stage . . . no, more than that . . . the Maestro *is* the stage, an electronic analogue of it." He patted the metal housing. "All the actors' personality patterns are packed in here. It's more than a remote controller, the way most people think of it. It's a creative directing machine. It's even got pickups out in the audience to gauge reactions to—"

He stopped suddenly, staring at the

old actor's face. He swallowed nervously. "Thorny *don't* look that way. I'm sorry. Here, have a cigarette."

Thorny accepted it with trembling fingers. He stared down into the gleaming maze of circuitry with narrowed eyes, watched the script-belt climb slowly over the rollers and down into the bowels of the Maestro.

"Art!" he hissed. "Theater! What'd they give you your degree in, Richard? Dramaturgical engineering?"

He shuddered and stalked out of the booth. Rick listened to the angry rattle of his heels on the iron stairs that led down to stage level. He shook his head sadly, shrugged, went back to inspecting the tape for rough cuts.

Thorny came back after a few minutes with a bucket and a mop. He looked reluctantly repentant. "Sorry, lad," he grunted. "I know you're just trying to make a living, and—"

"Skip it," Rick grunted curtly.

"It's just . . . well . . . this particular show. It gets me."

"This—? 'The Anarch,' you mean? What about it, Thorny? You play in it once?"

"Uh-uh. It hasn't been on the stage since the Nineties, except—well, it was almost revived ten years ago. We rehearsed for weeks. Show folded before opening night. No dough."

"You had a good part in it?"

"I was to play Andreyev," Thornier told him with a faint smile.

Rick whistled between his teeth. "The lead. That's too bad." He

hoisted his feet to let Thorny mop under them. "Big disappointment, I guess."

"It's not that. It's just . . . well . . . 'The Anarch' rehearsals were the last time Mela and I were on stage together. That's all."

"Mela?" The technician paused, frowning. "Mela *Stone*?"

Thornier nodded.

Rick snatched up a copy of the uncoded script, waved it at him. "But she's in *this* version, Thorny! Know that! She's playing Marka."

Thornier's laugh was brief and brittle.

Rick reddened slightly. "Well, I mean her mannequin's playing it."

Thorny eyed the Maestro distastefully. "Your mechanical Svengali's playing its airfoam zombies in *all* roles, you mean."

"Oh, cut it out, Thorny. Be sore at the world if you want to, but don't blame me for what audiences want. And I didn't invent autodrama anyhow."

"I don't blame anybody. I merely detest that . . . that—" He punched at the base of the Maestro with his wet mop.

"You and D'Uccia," Rick grunted disgustedly. "Except—D'Uccia loves it when it's working O.K. It's just a machine, Thorny. Why hate it?"

"Don't need a reason to hate it," he said, snarly-petulant. "I hate air-cabs, too. It's a matter of taste, that's all."

"All right, but the public likes autodrama—whether it's by TV, stereo, or on stage. And they get what they want."

"*Why?*"

Rick snickered. "Well, it's their dough. Autodrama's portable, predictable, duplicatable. And flexible. You can run 'Macbeth' tonight, the 'Anarch' tomorrow night, and 'King of the Moon' the next night—in the same house. No actor-temperament problems. No union problems. Rent the packaged props, dolls, and tapes from Smithfield. Packaged theater. Systematized, mass-produced. In Coon Creek, Georgia, yet."

"Bah!"

Rick finished feeding in the script tape, closed the panel, and opened an adjacent one. He ripped the lid from a cardboard carton and dumped a heap of smaller tape-spools on the table.

"Are *those* the souls they sold to Smithfield?" Thornier asked, smiling at them rather weirdly.

The technician's stool scraped back and he exploded: "You know what they are!"

Thornier nodded, leaned closer to stare at them as if fascinated. He plucked one of them out of the pile, sighed down at it.

"If you say 'Alas, poor Yorick,' I'll heave you out of here!" Rick grated.

Thornier put it back with a sigh and wiped his hand on his coveralls. Packaged personalities. Actor's egos,

analogized on tape. Real actors, once, whose dolls were now cast in the roles. The tapes contained complex psychophysiological data derived from months of psychic and somatic testing, after the original actors had signed their Smithfield contracts. Data for the Maestro's personality matrices. Abstractions from the human psyche, incarnate in glass, copper, chromium. The souls they rented to Smithfield on a royalty basis, along with their flesh and blood likenesses in the dolls.

Rick loaded a casting spool onto its spindle, started it feeding through the pickups.

"What happens if you leave out a vital ingredient? Such as Mela Stone's tape, for instance," Thornier wanted to know.

"The doll'd run through its lines like a zombie, that's all," Rick explained. "No zip. No interpretation. Flat, deadpan, like a robot."

"They are robots."

"Not exactly. Remote marionettes for the Maestro, but interpreted. We did a run-through on 'Hamlet' once, without any actor tapes. Everybody talked in flat monotones, no expressions. It was a scream."

"Ha, ha," Thornier said grimly.

Rick slipped another tape on the spindle, clicked a dial to a new setting, started the feed again. "This one's Andreyev, Thornier—played by Pelletier." He cursed suddenly, stopped the feed, inspected the tape anxiously,

flipped open the pickup mechanism, and inspected it with a magnifier.

"What's wrong?" asked the janitor.

"Take-off's about worn out. Hard to keep its spacing right. I'm nervous about it getting hung up and chewing up the tape."

"No duplicate tapes?"

"Yeah. One set of extras. But the show opens tonight." He cast another suspicious look at the pickup glideway, then closed it and switched the feed again. He was replacing the panel when the feed mechanism stalled. A ripping sound came from inside. He muttered fluent profanity, shut off the drive, jerked away the panel. He held up a shredded ribbon of tape for Thorny to see, then flung it angrily across the booth. "Get out of here! You're a jinx!"

"Not till I finish mopping."

"Thorny, get D'Uccia for me, will you? We'll have to get a new pickup flown in from Smithfield before this afternoon. This is a helluva mess."

"Why not hire a human stand-in?" he asked nastily, then added: "Forgive me. That would be a perversion of your art, wouldn't it? Shall I get D'Uccia?"

Rick threw the Peltier spool at him. He ducked out with a chuckle and went to find the theater manager. Halfway down the iron stairs, he paused to look at the wide stage that spread away just beyond the folded curtains. The footlights were burning, and the gray-green floor looked clean and shimmering, with its checkerboard

pattern of imbedded copper strips. The strips were electrified during the performance, and they fed the mannequins' energy-storage packs. The dolls had metallic disks in their soles, and rectifiers in their insteps. When batteries drained low, the Maestro moved the actor's foot an inch or so to contact the floor electrodes for periodic recharging during the play, since a doll would grow wobbly and its voice indistinct after a dozen minutes on internal power alone.

Thorny stared at the broad expanse of stage where no humans walked on performance night. D'Uccia's Siamese tomcat sat licking itself in the center of the stage. It glanced up at him haughtily, seemed to sniff, began licking itself again. He watched it for a moment, then called back upstairs to Rick.

"Energize the floor a minute, will you, Rick?"

"Huh? Why?"—a busy grunt.

"Want to check something."

"O.K., but then fetch D'Uccia."

He heard the technician snap a switch. The cat's calm hauteur exploded. The cat screamed, scrambled, barrel-rolled, amid a faint sputter of sparks. The cat did an Immelmann turn over the footlights, landed in the pit with a clawing crash, then scampered up the aisle with fur erect toward its haven beneath Imperio's desk.

"Whatthehell?" Rick growled, and thrust his head out of the booth.

"Shut it off now," said the janitor.  
"D'Uccia'll be here in a minute."

"With fangs showing!"

Thornier went to finish his routine clean-up. Gloom had begun to gather about him. He was leaving—leaving even this last humble role in connection with the stage. A fleeting realization of his own impotence came to him. Helpless. Helpless enough to seek petty revenges like vandalizing D'Uccia's window box and tormenting D'Uccia's cat, because there was not any real enemy at which he could strike out.

He put the realization down firmly, and stamped on it. *He* was Ryan Thornier, and never helpless, unless he willed it so. I'll make them know

who I am just *once*, he thought, before I go. I'll make them remember, and they won't ever forget.

But that line of thought about playing one last great role, one last masterful interpretation, he knew was no good. "Thorny, if you ever played a one-last-great," Rick had said to him once, "there wouldn't be a thing left to live for, would there?" Rick had said it cynically, but it was true anyhow. And the pleasant fantasy was somehow alarming as well as pleasant.

The chic little woman in the white-plumed hat was explaining things carefully—with round vowels and precise enunciation—to the Playwright of the Moment, up-and-coming, with awed



worshipfulness in his gaze as he listened to the pert little producer. "Stark realism, you see, is the milieu of autodrama," she said. "Always remember, Bernie, that consideration for the actors is a thing of the past. Study the drama of Rome—ancient Rome. If a play had a crucifixion scene, they got a slave for the part and crucified him. On stage, but *really!*"

The Playwright of the Moment laughed dutifully around his long cigarette holder. "So that's where they got the line: 'It's superb, but it's hell on the actors.' I must rewrite the murder scene in my 'George's Wake.' Do it with a hatchet, this time."

"Oh, now, *Bernie!* Mannequins don't bleed."

They both laughed heartily. "And they *are* expensive. Not hell on the actors, but hell on the budget."

"The Romans probably had the same problem. I'll bear it in mind."

Thornier saw them—the producer and the Playwright of the Moment—standing there in the orchestra when he came from backstage and across toward the center aisle. They lounged on the arms of their seats, and a crowd of production personnel and technicians milled about them. The time for the first run-through was approaching.

The small woman waved demurely to Thorny when she saw him making his way slowly through the throng, then turned to the playwright again. "Bernie, be a lamb and get me a

drink, will you? I've got a butterfly."

"Surely. Hard, or soft?"

"Oh, hard. Scotch mist in a paper cup, please. There's a bar next door."

The playwright nodded a nod that was nearly a bow and shuffled away up the aisle. The woman caught at the janitor's sleeve as he passed.

"Going to snub me, Thorny?"

"Oh, hello, Miss Ferne," he said politely,

She leaned close and muttered: "Call me 'Miss Ferne' again and I'll claw you." The round vowels had vanished.

"O.K., Jade, but—" He glanced around nervously. Technicians milled about them. Ian Feria, the producer, watched them curiously from the wings.

"What's been doing with you, Thorny? Why haven't I seen you," she complained.

He gestured with the broom handle, shrugged. Jade Ferne studied his face a moment and frowned. "Why the agonized look, Thorny? Mad at me?"

He shook his head. "This play, Jade—" "The Anarch," well—" He glanced miserably toward the stage.

Memory struck her suddenly. She breathed a compassionate *ummm*. "The attempted revival, ten years ago—you were to be Andreyev. Oh, Thorny, I'd forgotten."

"It's all right." He wore a carefully tailored martyr's smile.

She gave his arm a quick pat. "I'll see you after the run-through, Thorny.

We'll have a drink and talk old times."

He glanced around again and shook his head. "You've got new friends now, Jade. They wouldn't like it."

"The crew? Nonsense! They're not snobs."

"No, but they want your attention. Feria's trying to catch your eye right now. No use making them sore."

"All right, but after the run-through I'll see you in the mannequin room. I'll just slip away."

"If you want to."

"I do, Thorny. It's been so long."

The playwright returned with her Scotch mist and gave Thornier a hostilely curious glance.

"Bless your heart, Bernie," she said, the round vowels returning, then to Thornier: "Thorny, would you do me a favor? I've been trying to corner D'Uccia, but he's tied up with a servo-salesman somewhere. Somebody's got to run and pick up a mannequin from the depot. The shipment was delivered, but the trucker missed a doll crate. We'll need it for the run-through. Could you—"

"Sure, Miss Ferne. Do I need a requisition order?"

"No, just sign the delivery ticket. And Thorny, see if the new part for the Maestro's been flown in yet. Oh, and one other thing—the Maestro chewed up the Peltier tape. We've got a duplicate, but we should have two, just to be safe."

"I'll see if they have one in stock," he murmured, and turned to go.

D'Uccia stood in the lobby with the salesman when he passed through. The theater manager saw him and smirked happily.

"... Certain special features, of course," the salesman was saying. "It's an old building, and it wasn't designed with autojanitor systems in mind, like buildings are now. But we'll tailor the installation to fit your place, Mr. D'Uccia. We want to do the job *right*, and a packaged unit wouldn't do it."

"Yah, you gimme da price, hah?"

"We'll have an estimate for you by tomorrow. I'll have an engineer over this afternoon to make the survey, and he'll work up a layout tonight."

"Whatsa 'bout the demonstration, uh? Whatsa 'bout you show how da swip-op machine go?"

The salesman hesitated, eying the janitor who waited nearby. "Well, the floor-cleaning robot is only a small part of the complete service, but . . . I tell you what I'll do. I'll bring a packaged char-all over this afternoon, and let you have a look at it."

"Fine. Datsa fine. You bring her, den we see."

They shook hands. Thornier stood with his arms folded, haughtily inspecting a bug that crawled across the frond of a potted palm, and waiting for a chance to ask D'Uccia for the keys to the truck. He felt the theater manager's triumphant gaze, but gave no indication that he heard.

"We can do the job for you all

right, Mr. D'Uccia. Cut your worries in half. And that'll cut your doctor bills in half, too, like you say. Yes, sir! A man in your position gets ground down with just plain human inefficiency—other people's inefficiency. You'll never have to worry about that, once you get the building autojanitored, no sir!"

"Thank you kindly."

"Thank you, Mr. D'Uccia, and I'll see you later this afternoon."

The salesman left.

"Well, bom?" D'Uccia grunted to the janitor.

"The keys to the truck. Miss Ferne wants a pickup from the depot."

D'Uccia tossed them to him. "You hear what the man say? Letsa machines do alla work, hah? Always you wantsa day off. O.K., you takka da day off, ever'day pretty soon. Nice for you, hah, ragazzo?"

Thornier turned away quickly to avoid displaying the surge of unwanted anger. "Be back in an hour," he grunted, and hurried away on his errand, his jaw working in sullen resentment. Why wait around for two humiliating weeks? Why not just walk out? Let D'Uccia do his own chores until the autojan was installed. He'd never be able to get another job around the theater anyhow, so D'Uccia's reaction wouldn't matter.

*I'll walk out now*, he thought—and immediately knew that he wouldn't. It was hard to explain to himself, but

—when he thought of the final moment when he would be free to look for a decent job and a comfortable living—he felt a twinge of fear that was hard to understand.

The janitor's job had paid him only enough to keep him alive in a fourth floor room where he cooked his own meager meals and wrote memoirs of the old days, but it had kept him close to the lingering remnants of something he loved.

"Theater," they called it. Not *the* theater—as it was to the scalper's victim, the matinée housewife, or the awestruck hick—but just "theater." It wasn't a place, wasn't a business, wasn't the name of an art. "Theater" was a condition of the human heart and soul. Jade Ferne was theater. So was Ian Feria. So was Mela, poor kid, before her deal with Smithfield. Some had it, others didn't. In the old days, the ones that didn't have it soon got out. But the ones that had it, still had it, ever after *the* theater was gobbled up by technological change. And they hung around. Some of them, like Jade and Ian and Mela, adapted to the change, profited by the prostitution of the stage, and developed ulcers and a guilty conscience. Still, they were theater, and because they were, he, Thornier, hung around, too, scrubbing the floors they walked on, and feeling somehow that he was still in theater. Now he was leaving. And now he felt the old bitterness boiling up inside again. The bitterness had been chronic

and passive, and now it threatened to become active and acute.

"If I could only give them one last performance!" he thought. One last great role—

But *that* thought led to the fantasy-plan for revenge, the plan that came to him often as he wandered about the empty theater. Revenge was no good. And the plan was only a daydream. And yet—he wasn't going to get another chance.

He set his jaw grimly and drove on to the Smithfield depot.

The depot clerk had hauled the crated mannequin to the fore, and it was waiting for Thornier when he entered the stock room. He rolled it out from the wall on a dolly, and the janitor helped him wrestle the coffin-sized packing case onto the counter.

"Don't take it to the truck yet," the clerk grunted around the fat stub of a cigar. "It ain't a new doll, and you gotta sign a release."

"What kind of a release?"

"Liability for malfunction. If the doll breaks down during the show, you can't sue Smithfield. It's standard prack for used-doll rentals."

"Why didn't they send a new one, then?"

"Discontinued production on this model. You want it, you take a used one, and sign the release."

"Suppose I don't sign?"

"No siggy, no dolly."

"Oh." He thought for a moment.

Obviously, the clerk had mistaken him for production personnel. His signature wouldn't mean anything—but it was getting late, and Jade was rushed. Since the release wouldn't be valid anyhow he reached for the form.

"Wait," said the clerk. "You better look at what you're signing for." He reached for a wrecking claw and slipped it under a metal binding strap. The strap broke with a screechy snap. "It's been overhauled," the clerk continued. "New solenoid fluid injected, new cosmetic job. Nothing really wrong. A few fatigue spots in the padding, and one toe missing. But you oughta have a look, anyhow."

He finished breaking the lid-fastenings loose and turned to a wall-control board. "We don't have a complete Maestro here," he said as he closed a knife switch, "but we got the control transmitters, and some taped sequences. It's enough to pre-flight a doll."

Equipment hummed to life somewhere behind the panel. The clerk adjusted several dials while Thornier waited impatiently.

"Let's see—" muttered the clerk. "Guess we'll start off with the Frankenstein sequence." He flipped a switch.

A purring sound came faintly from within the coffinlike box. Thornier watched nervously. The lid stirred, began to rise. A woman's hands came into view, pushing the lid up from within. The purring increased. The lid clattered aside to hang by the metal straps.

The woman sat up and smiled at the janitor.

Thornier went white. "Mela!" he hissed.

"Ain't that a chiller?" chuckled the clerk. "Now for the hoochy-coochy sequence—"

"No—"

The clerk flipped another switch. The doll stood up slowly, chastely nude as a window-dummy. Still smiling at Thorny, the doll did a bump and a grind.

"Stop it!" he yelled hoarsely.

"Whassa matter, buddy?"

Thorny heard another switch snap. The doll stretched gracefully and yawned. It stretched out in its packing case again, closed its eyes and folded its hands over its bosom. The purring stopped.

"What's eating you?" the clerk grumbled, slapping the lid back over the case again. "You sick or something?"

"I . . . I knew her," Ryan Thornier wheezed. "I used to work—" He shook himself angrily and seized the crate.

"Wait, I'll give you a hand."

Fury awakened new muscles. He hauled the crate out on the loading dock without assistance and dumped it in the back of the truck, then came back to slash his name across the release forms.

"You sure get sore easy," the clerk mumbled. "You better take it easy. You sure better take it easy."

Thorny was cursing softly as he nosed the truck out into the river of traffic. Maybe Jade thought it was funny, sending him after Mela's doll. Jade remembered how it had been between them—if she bothered to think about it. Thornier and Stone—a team that had gotten constant attention from the gossip columnists in the old days. Rumors of engagement, rumors of secret marriage, rumors squabbles and reunions, break-ups and patch-ups, and some of the rumors were almost true. Maybe Jade thought it was a howl, sending him to fetch the mannequin.

But no—his anger faded as he drove along the boulevard—she hadn't thought about it. Probably she tried hard not to think of old times any more.

Gloom settled over him again, replacing rage. Still it haunted him—the horrified shock of seeing her sit up like an awakened corpse to smile at him. *Mela . . . Mela—*

They'd had it good together and bad together. Bit parts and beans in a cold-water flat. Starring roles and steaks at Sardi's. And—love? Was that what it was? He thought of it uneasily. Hypnotic absorption in each other, perhaps, and in the mutual intoxication of their success—but it wasn't necessarily love. Love was calm and even and lasting, and you paid for it with a dedicated lifetime, and Mela wouldn't pay. She'd walked out on them. She'd walked to Smithfield and

bought security with sacrifice of principle. There'd been a name for what she'd done. "Scab," they used to say.

He shook himself. It was no good, thinking about those times. Times died with each passing minute. Now they paid \$8.80 to watch Mela's figurine move in her stead, wearing Mela's face, moving with Mela's gestures, walking with the same lilting walk. And the doll was still young, while Mela had aged ten years, years of collecting quarterly royalties from her dolls and living comfortably.

*Great Actors Immortalized*—that was one of Smithfield's little slogans. But they had discontinued production on Mela Stone, the depot clerk had said. Overstocked.

The promise of relative immortality had been quite a bait. Actors unions had resisted autodrama, for obviously the bit players and the lesser-knowns would not be in demand. By making dozens—even hundreds—of copies of the same leading star, top talent could be had for every role, and the same actor-mannequin could be playing simultaneously in dozens of shows all over the country. The unions had resisted—but only a few were wanted by Smithfield anyhow, and the lure was great. The promise of fantastic royalties was enticing enough, but in addition—immortality for the actor, through duplication of mannequins. Authors, artists, playwrights had always been able to outlive the centuries, but actors were remembered only by

professionals, and their names briefly recorded in the annals of the stage. Shakespeare would live another thousand years, but who remembered Dick Burbage who trouped in the day of the bard's premiers? Flesh and bone, heart and brain, these were the trouper's media, and his art could not outlive them.

Thorny knew the yearnings after lastingness, and he could no longer hate the ones who had gone over. As for himself, the autodrama industry had made him a tentative offer, and he had resisted—partly because he was reasonably certain that the offer would have been withdrawn during testing procedures. Some actors were not "cybergenic"—could not be adequately sculptured into electronic-robotic analogues. These were the portrayers, whose art was inward, whose roles had to be lived rather than played. No polygraphic analogue could duplicate their talents, and Thornier knew he was one of them. It had been easy for him to resist.

At the corner of Eighth Street, he remembered the spare tape and the replacement pickup for the Maestro. But if he turned back now, he'd hold up the run-through, and Jade would be furious. Mentally he kicked himself, and drove on to the delivery entrance of the theater. There he left the crated mannequin with the stage crew, and headed back for the depot without seeing the producer.

"Hey, bud," said the clerk, "your boss was on the phone. Sounded pretty unhappy."

"Who . . . D'Uccia?"

"No . . . well, yeah, D'Uccia, too. He wasn't unhappy, just having fits. I meant Miss Ferne."

"Oh . . . where's your phone?"

"Over there. The lady was near hysterical."

Thorny swallowed hard and headed for the booth. Jade Ferne was a good friend, and if his absent-mindedness had goofed up her production—

"I've got the pickup and the tape ready to go," the clerk called after him. "She told me about it on the phone. Boy, you're sure on the ball today, ain't ya—the greasy eight ball."

Thorny reddened and dialed nervously.

"Thank God!" she groaned. "Thorny, we did the run-through with Andreyev a walking zombie. The Maestro chewed up our duplicate Peltier tape, and we're running without an actor-analogue in the starring role. Baby, I could murder you!"

"Sorry, Jade. I slipped a cog, I guess."

"Never mind! Just get the new pickup mechanism over here for Thomas. And the Peltier tape. And don't have a wreck. It's two o'clock, and tonight's opening, and we're still short our leading man. And there's no time to get anything else flown in from Smithfield."

"In some ways, nothing's changed,

has it, Jade?" he grunted, thinking of the eternal backstage hysteria that lasted until the lights went low and beauty and calm order somehow emerged miraculously out of the prevailing chaos.

"Don't philosophize, just *get* here!" she snapped, and hung up.

The clerk had the cartons ready for him as he emerged. "Look, chum, better take care of that Peltier tape," the clerk advised. "It's the last one in the place. I've got more on order, but they won't be here for a couple of days."

Thornier stared at the smaller package thoughtfully. The last Peltier?

The plan, he remembered the plan. *This* would make it easy. Of course, the plan was only a fantasy, a vengeful dream. He couldn't go through with it. To wreck the show would be a stab at Jade—

He heard his own voice like a stranger's, saying: "Miss Ferne also asked me to pick up a Wilson Granger tape, and a couple of three-inch splices."

The clerk looked surprised. "Granger? He's not in the 'Anarch,' is he?"

Thornier shook his head. "No—guess she wants it for a trial casting. Next show, maybe."

The clerk shrugged and went to get the tape and the splices. Thornier stood clenching and unclenching his fists. He wasn't going to go through with it, of course. Only a silly fantasy.

"I'll have to make a separate ticket on these" said the clerk, returning.

He signed the delivery slips in a daze,

then headed for the truck. He drove three blocks from the depot, then parked in a loading zone. He opened the tape cartons carefully with his penknife, peeling back the glued flaps so that they could be sealed again. He removed the two rolls of pattern perforated tape from their small metal canisters, carefully plucked off the masking-tape seals and stuck them temporarily to the dashboard. He unrolled the first half-yard of the Peltier tape; it was unperforated, and printed with identifying codes and manufacturer's data. Fortunately, it was not a brand-new tape; it had been used before, and he could see the wear-marks. A splice would not arouse suspicion.

He cut off the identifying tongue with his knife, laid it aside. Then he did the same to the Granger tape.

Granger was fat, jovial, fiftyish. His mannequin played comic supporting roles.

Peltier was young, gaunt, gloomy—the intellectual villain, the dedicated fanatic. A fair choice for the part of Andreyev.

Thornier's hands seemed to move of their own volition, playing reflexively in long-rehearsed roles. He cut the tapes. He took out one of the hot-splice packs and jerked the tab that started the chemical action. He clocked off fifteen seconds by his watch, then opened the pack and fitted into it the cut ends of the Granger tape and the Peltier identifying tongue, butted them

carefully end to end, and closed the pack. When it stopped smoking, he opened it to inspect the splice. A neat patch, scarcely visible on the slick plastic tape. Granger's analogue, labeled as Peltier's. And the body of the mannequin was Peltier's. He resealed it in its canister.

He wadded the Peltier tape and the Granger label and the extra delivery receipt copy into the other box. Then he pulled the truck out of the loading zone and drove through the heavy traffic like a racing jockey, trusting the anti-crash radar to see him safely through. As he crossed the bridge, he threw the Peltier tape out the window into the river. And then there was no retreat from what he had done.

Jade and Feria sat in the orchestra, watching the final act of the run-through with a dud Andreyev. When Thorny slipped in beside them, Jade wiped mock sweat from her brow.

"Thank God you're back!" she whispered as he displayed the delayed packages. "Sneak backstage and run them up to Rick in the booth, will you? Thorny, I'm out of my mind!"

"Sorry, Miss Ferne." Fearing that his guilty nervousness hung about him like a ragged cloak, he slipped quickly backstage and delivered the cartons to Thomas in the booth. The technician hovered over the Maestro as the play went on, and he gave Thornier only a quick nod and a wave.

Thorny retreated into misty old

corridors and unused dressing rooms, now heaped with junk and remnants of other days. He had to get a grip on himself, had to quit quaking inside. He wandered alone in the deserted sections of the building, opening old doors to peer into dark cubicles where great stars had preened in other days, other nights. Now full of trunks and cracked mirrors and tarpaulins and junked mannequins. Faint odors lingered—nervous smells—perspiration, make-up, dim perfume that pervaded the walls. Mildew and dust—the aroma of time. His footsteps sounded hollowly through the unpeopled rooms, while muffled sounds from the play came faintly through the walls—the hysterical pleading of Marka, the harsh laughter of Piotr, the marching boots of the revolutionist guards, a burst of music toward the end of the scene.

He turned abruptly and started back toward the stage. It was no good, hiding away like this. He must behave normally, must do what he usually did. The falsified Peltier tape would not wreck its havoc until after the first run-through, when Thomas fed it into the Maestro, reset the machine, and prepared to start the second trial run. Until then, he must remain casually himself, and afterwards—?

Afterwards, things would have to go as he had planned. Afterwards, Jade would have to come to him, as he believed she would. If she didn't, then he had bungled, he had clumsily wrecked, and to no avail.

He slipped through the power-room where converters hummed softly, supplying power to the stage. He stood close to the entrance, watching the beginnings of scene *iii*, of the third act. Andreyev—the Peltier doll—was on alone, pacing grimly in his apartment while the low grumble of a street mob and the distant rattle of machine-gun fire issued from the Maestro-managed sound effect system. After a moment's watching, he saw that Andreyev's movements were not "grim" but merely methodical and lifeless. The tapeless mannequin, going through the required motions, robotlike, without interpretation of meaning. He heard a brief burst of laughter from someone in the production row, and after watching the zombielike rendering of Andreyev in a suspenseful scene, he, too, found himself grinning faintly.

The pacing mannequin looked toward him suddenly with a dead-pan face. It raised both fists toward its face.

"Help," it said in a conversational monotone. "Ivan, where are you? Where? Surely they've come; they must come." It spoke quietly, without inflection. It ground its fists casually against its temples, paced mechanically again.

A few feet away, two mannequins that had been standing frozen in the off-stage lineup, clicked suddenly to life. As ghostly calm as display window dummies, they galvanized suddenly at a signal pulse command from the

Maestro. Muscles—plastic sacs filled with oil-suspended magnetic powder and wrapped with elastic coils of wire, like flexible solenoids—tightened and strained beneath the airfoam flesh, working spasmodically to the pulsing rhythms of the polychromatic u.h.f. commands of the Maestro. Expressions of fear and urgency leaped to their faces. They crouched, tensed, looked around, then burst on stage, panting wildly.

"Comrade, she's come, she's come!" one of them screamed. "She's come with *him*, with Boris!"

"What? She has him prisoner?" came the casual reply.

"No, no, comrade. We've been betrayed. She's with him. She's a traitor, she's sold out to them."

There was no feeling in the uninterpreted Andreyev's responses, even when he shot the bearer of bad tidings through the heart.

Thornier grew fascinated with watching as the scene progressed. The mannequins moved gracefully, their movements sinuous and more evenly flowing than human, they seemed boneless. The ratio of mass-to-muscle power of their members was carefully chosen to yield the flow of a dance with their every movement. Not clanking mechanical robots, not stumbling puppets, the dolls sustained patterns of movement and expression that would have quickly brought fatigue to a human actor, and the Maestro

coordinated the events on stage in a way that would be impossible to a group of humans, each an individual and thinking independently.

It was as always. First, he looked with a shudder at the Machine moving in the stead of flesh and blood, at Mechanism sitting in the seat of artistry. But gradually his chill melted away, and the play caught him, and the actors were no longer machines. He lived in the role of Andreyev, and breathed the lines off stage, and he knew the rest of them: Mela and Peltier, Sam Dion and Peter Repplewaite. He tensed with them, gritted his teeth in anticipation of difficult lines, cursed softly at the dud Andreyev, and forgot to listen for the faint crackle of sparks as the mannequins' feet stepped across the copper-studded floor, drinking energy in random bites to keep their storage packs near full charge.

Thus entranced, he scarcely noticed the purring and brushing and swishing sounds that came from behind him, and grew louder. He heard a quiet mutter of voices nearby, but only frowned at the distraction, kept his attention rooted to the stage.

Then a thin spray of water tickled his ankles: Something soggy and spongelike slapped against his foot. He whirled.

A gleaming metal spider, three feet high came at him slowly on six legs, with two grasping claws extended. It clicked its way toward him across the



floor, throwing out a thin spray of liquid which it promptly sucked up with the spongelike proboscis. With one grasping claw, it lifted a ten-gallon can near his leg, sprayed under it, swabbed, and set the can down again.

Thornier came unfrozen with a howl, leaped over the thing, hit the wet-soapy deck off balance. He skidded and sprawled. The spider scrubbed at the floor toward the edge of the stage, then reversed directions and came back toward him.

Groaning, he pulled himself together, on hands and knees. D'Uccia's cackling laughter spilled over him. He glanced up. The chubby manager and the servo salesman stood over him, the salesman grinning, D'Uccia chortling.

"Datsa ma boy, datsa ma boy! Always, he watcha the show, then he don't swip-op around, then he wantsa day off. Thatsa ma boy, for sure." D'Uccia reached down to pat the metal spider's chassis. "Hey, *ragazzo*," he said again to Thornier, "want you should meet my new *boy* here. This one, he don't watcha the show like you."

He got to his feet, ghost-white and muttering. D'Uccia took closer note of his face, and his grin went sick. He inched back a step. Thornier glared at him briefly, then whirled to stalk away. He whirled into near collision with the Mela Stone mannequin, recovered, and started to pass in back of it.

Then he froze.

The Mela Stone mannequin was on stage, in the final scene. And this one looked older, and a little haggard. It wore an expression of shocked surprise as it looked him up and down. One hand darted to its mouth.

"Thorny—!" A frightened whisper.

"*Mela!*" Despite the play, he shouted it, opening his arms to her. "Mela, how *wonderful!*"

And then, he noticed she winced away from his sodden coveralls. And she wasn't glad to see him at all.

"Thorny, how nice," she managed to murmur, extending her hand gingerly. The hand flashed with jewelry.

He took it for an empty second, stared at her, then walked hurriedly away, knots twisting up inside him. Now he could play it through. Now he could go on with it, and even enjoy executing his plan against all of them.

Mela had come to watch opening night for her doll in "The Anarch," as if its performance were her own. *I'll arrange*, he thought, *for it not to be a dull show.*

"No, no, *nooo!*" came the monotone protest of the dud Andreyev, in the next-to-the-last scene. The bark of Marka's gun, and the Peltier mannequin crumpled to the stage; and except for a brief triumphant denouement, the play was over.

At the sound of the gunshot, Thornier paused to smile tightly over his shoulder, eyes burning from his hawk-like face. Then he vanished into the wings.

She got away from them as soon as she could, and she wandered around backstage until she found him in the storage room of the costuming section. Alone, he was sorting through the contents of an old locker and muttering nostalgically to himself. She smiled and closed the door with a thud. Startled, he dropped an old collapsible top-hat and a box of blank cartridges back into the trunk. His hand dived into his pocket as he straightened.

"Jade! I didn't expect—"

"Me to come?" She flopped on a dusty old chaise lounge with a weary sigh and fanned herself with a program, closing her eyes. She kicked off her shoes and muttered: "Infuriating bunch. I hate 'em!"—made a retching face, and relaxed into little-girlhood. A little girl who had trouped with Thornier and the rest of them—the *actress* Jade Ferne, who had begged for bit parts and haunted the agencies and won the roles through endless rehearsals and shuddered with fright before opening curtain like the rest of them. Now she was a pert little woman with shrewd eyes, streaks of gray at the temples, and hard lines around her mouth. As she let the executive cloak slip away, the shrewdness and the hard lines melted into weariness.

"Fifteen minutes to get my sanity back, Thorny," she muttered, glancing at her watch as if to time it.

He sat on the trunk and tried to relax. She hadn't seemed to notice his uneasiness, or else she was just too

tired to attach any significance to it. If she found him out, she'd have him flayed and pitched out of the building on his ear, and maybe call the police. She came in a small package, but so did an incendiary grenade. *It won't hurt you, Jade, what I'm doing*, he told himself. *I'll cause a big splash, and you won't like it, but it won't hurt you, nor even wreck the show.*

He was doing it for show business, the old kind, the kind they'd both known and loved. And in that sense, he told himself further, he was doing it as much for her as he was for himself.

"How was the run-through, Jade?" he asked casually. "Except for Andreiev, I mean."

"Superb, simply superb," she said mechanically.

"I mean *really*."

She opened her eyes, made a sick mouth. "Like always, Thorny, like always. Nauseating, overplayed, perfectly directed for a gum-chewing bag-rattling crowd. A crowd that wants it overplayed so that it won't have to think about what's going on. A crowd that doesn't want to reach *out* for a feeling or a meaning. It wants to be clubbed in the head with the meaning, so it doesn't have to reach. I'm sick of it."

He looked briefly surprised. "That figures," he grunted wryly.

She hooked her bare heels on the edge of the lounge, hugged her shins, rested her chin on her knees, and blinked at him. "Hate me for produc-

ing the stuff, Thorny?"

He thought about it for a moment, shook his head. "I get sore at the set-up sometimes, but I don't blame you for it."

"That's good. Sometimes I'd trade places with you. Sometimes I'd rather be a charwoman and scrub D'Uccia's floors instead."

"Not a chance," he said sourly. "The Maestro's relatives are taking that over, too."

"I know. I heard. You're out of a job, thank God. Now you can get somewhere."

He shook his head. "I don't know where. I can't do anything but act."

"Nonsense. I can get you a job tomorrow."

"Where?"

"With Smithfield. Sales promotion. They're hiring a number of old actors in the department."

"No." He said it flat and cold.

"Not so fast. This is something new. The company's expanding."

"Ha."

"Autodrama for the home. A four-foot stage in every living room. Miniature mannequins, six inches high. Centralized Maestro service. Great plays piped to your home by concentric cable. Just dial Smithfield, make your request. Sound good?"

He stared at her icily. "Greatest thing in show-business since Sarah Bernhardt," he offered tonelessly.

"Thorny! Don't get nasty with me!"

"Sorry. But what's so new about having it in the home? Autodrama took over TV years ago."

"I know, but this is different. Real miniature theater. Kids go wild for it. But it'll take good promotion to make it catch on."

"Sorry, but you know me better than that."

She shrugged, sighed wearily, closed her eyes again. "Yes, I do. You've got portrayer's integrity. You're a darfsteller. A director's ulcer. You can't play a role without living it, and you won't live it unless you believe it. So go ahead and starve." She spoke crossly, but he knew there was grudging admiration behind it.

"I'll be O.K.," he grunted, adding to himself: *after tonight's performance.*

"Nothing I can do for you?"

"Sure. Cast me. I'll stand in for dud mannequins."

She gave him a sharp glance, hesitated. "You know, I believe you *would!*"

He shrugged. "Why not?"

She stared thoughtfully at a row of packing cases, waggled her dark head. "Hmmp! What a spectacle that'd be—a human actor, incognito, playing in an autodrama."

"It's been done—in the sticks."

"Yes, but the audience knew it was being done, and that always spoils the show. It creates contrasts that don't exist or wouldn't be noticed otherwise. Makes the dolls seem snaky, birdlike, too rubbery quick. With no humans on

stage for contrast, the dolls just seem wistfully graceful, ethereal."

"But if the audience didn't know—"

Jade was smiling faintly. "I wonder," she mused. "I wonder if they'd guess. They'd notice a difference, of course—in one mannequin."

"But they'd think it was just the Maestro's interpretation of the part."

"Maybe—if the human actor were careful."

He chuckled sourly. "If it fooled the critics—"

"Some ass would call it 'an abysmally unrealistic interpretation' or 'too obviously mechanical.'" She glanced at her watch, shook herself, stretched wearily, and slipped into her shoes again. "Anyway," she added, "there's no reason to do it, since the Maestro's *really* capable of rendering a better-than-human performance anyhow."

The statement brought an agonized gasp from the janitor. She looked at him and giggled. "Don't be shocked, Thorny. I said '*capable of*'—not '*in the habit of*.' Autodrama entertains audiences on the level they *want* to be entertained on."

"But—"

"*Just*," she added firmly, "as show business has always done."

"But—"

"Oh, retract your eyeballs, Thorny. I didn't mean to blaspheme." She preened, began slipping back into her producer's mold as she prepared to return to her crowd. "The only thing

wrong with autodrama is that it's scaled down to the moron-level—but show business always has been, and probably should be. Even if it gives us kids a pain." She smiled and patted his cheek. "Sorry I shocked you. Au 'voir, Thorny. And luck."

When she was gone, he sat fingering the cartridges in his pocket and staring at nothing. Didn't any of them have any sensibilities? Jade too, a seller of principle. And he had always thought of her as having merely compromised with necessity, against her real wishes. The idea that she could really believe autodrama capable of rendering a better-than-human performance—

But she didn't. Of course she needed to rationalize, to excuse what she was doing—

He sighed and went to lock the door, then to recover the old "Anarch" script from the trunk. His hands were trembling slightly. Had he planted enough of an idea in Jade's mind; would she remember it later? Or perhaps remember it too clearly, and suspect it?

He shook himself sternly. No apprehensions allowed. When Rick rang the bell for the second run-through, it would be his entrance-cue, and he must be in-character by then. Too bad he was no schauspieler, too bad he couldn't switch himself on-and-off the way Jade could do, but the necessity for much inward preparation was the burden of the darfsteller. He could not

change into a role without first changing himself, and letting the revision seep surfaceward as it might, reflecting the inner state of the man.

Strains of "Moussorgsky" pervaded the walls. He closed his eyes to listen and feel. Music for empire. Music at once brutal and majestic. It was the time of upheaval, of vengeance, of overthrow. Two times, superimposed. It was the time of opening night, with Ryan Thornier—ten years ago—cast in the starring role.

He fell into a kind of trance as he listened and clocked the pulse of his psyche and remembered. He scarcely noticed when the music stopped, and the first few lines of the play came through the walls.

"*Cut! Cut!*" A worried shout. Feria's. It had begun.

Thornier took a deep breath and seemed to come awake. When he opened his eyes and stood up, the janitor was gone. The janitor had been a nightmare role, nothing more.

And Ryan Thornier, star of "Walk-away," favored of the critics, confident of a bright future, walked out of the storage room with a strange lightness in his step. He carried a broom, he still wore the dirty coveralls, but now as if to a masquerade.

The Peltier mannequin lay sprawled on the stage in a grotesque heap. Ryan Thornier stared at it calmly from behind the set and listened intently to the babble of stage hands and techni-

cians that milled about him:

"Don't know. Can't tell yet. It came out staggering and gibbering—like it was drunk. It reached for a table, then it fell on its face—"

"Acted like the trouble might be a mismatched tape, but Rick rechecked it. Really Peltier's tape—"

"Can't figure it out. Miss Ferne's having kittens."

Thornier paused to size up his audience. Jade, Ian, and their staff milled about in the orchestra section. The stage was empty, except for the sprawled mannequin. Too much frantic conversation, all around. His entrance would go unnoticed. He walked slowly on-stage and stood over the fallen doll with his hands in his pockets and his face pulled down in a somber expression. After a moment, he nudged the doll with his toe, paused, nudged it again. A faint giggle came from the orchestra. The corner of his eye caught Jade's quick glance toward the stage. She paused in the middle of a sentence.

Assured that she watched, he played to an imaginary audience-friend standing just off stage. He glanced toward the friend, lifted his brows questioningly. The friend apparently gave him the nod. He looked around warily, then knelt over the fallen doll. He took its pulse, nodded eagerly to the off-stage friend. Another giggle came from orchestra. He lifted the doll's head, snuffed its breath, made a face. Then, gingerly, he rolled it.

He reached deep into the manne-

quin's pocket, having palmed his own pocket watch beforehand. His hand paused there, and he smiled to his off-stage accomplice and nodded eagerly. He withdrew the watch and held it up by its chain for his accomplice's approval.

A light burst of laughter came from the production personnel. The laughter frightened the thief. He shot an apprehensive glance around the stage, hastily returned the watch to the fallen dummy, felt its pulse again. He traded a swift glance with his confederate, whispered "Aha!" and smiled mysteriously. Then he helped the doll to its feet and staggered away with it—a friend leading a drunk home to its family. In the doorway, he paused to frame his exit with a wary backward glance that said he was taking it to a dark alley where he could rob it in safety.

Jade was gaping at him.

Three technicians had been watching from just off the set, and they laughed heartily and clapped his shoulder as he passed, providing the off-stage audience to which he had seemed to be playing.

Good-natured applause came from Jade's people out front, and as Thorny carried the doll away to storage, he was humming softly to himself.

At five minutes till six, Rick Thomas and a man from the Smithfield depot climbed down out of the booth, and Jade pressed forward through the

crowd to question him with her eyes.

"The tape," he said. "Defective."

"But it's too late to get another!" she squawked.

"Well, it's the tape, anyway."

"How do you *know*?"

"Well—trouble's bound to be in one of three places. The doll, the tape, or the analogue tank where the tape-data gets stored. We cleared the tank and tried it with another actor. Worked O.K. And the doll works O.K. on an uninterpreted run. So, by elimination, the tape."

She groaned and slumped into a seat, covering her face with her hands.

"No way at *all* to locate another tape?" Rick asked.

"We called every depot within five hundred miles. They'd have to cut one from a master. Take too long."

"So we call off the show!" Ian Feria called out resignedly, throwing up his hands in disgust. "Refund on tickets, open tomorrow."

"Wait!" snapped the producer, looking up suddenly. "Dooch—the house is sold out, isn't it?"

"Yah," D'Uccia grunted irritably. "She'sa filled op. Wassa matter with you pipple, you don' getsa Maestro fix? Wassa matter? We lose the money, hah?"

"Oh, shut up. Change curtain time to nine, offer refunds if they won't wait. Ian, keep at it. Get things set up for tonight." She spoke with weary determination, glancing around at them. "There may be a slim chance.

Keep at it. I'm going to try something."

She turned and started away.

"Hey!" Feria called.

"Explain later," she muttered over her shoulder.

She found Thornier replacing burned-out bulbs in the wall fixtures. He smiled down at her while he reset the clamps of an amber glass panel. "Need me for something, Miss Ferne?" he called pleasantly from the step-ladder.

"I might," she said tersely. "Did you mean that offer about standing in for dud mannequins?"

A bulb exploded at her feet after it slipped from his hand. He came down slowly, gaping at her.

"You're not serious!"

"Think you could try a run-through as Andreyev?"

He shot a quick glance toward the stage, wet his lips, stared at her dumbly.

"Well—*can* you?"

"It's been ten years, Jade . . . I—"

"You can read over the script, and you can wear an earplug radio—so Rick can prompt you from the booth."

She made the offer crisply and matter-of-factly, and it made Thorny smile inwardly. It was theater—calmly asking the outrageously impossible, gambling on it, and getting it.

"The customers—they're expecting Peltier."

"Right now I'm only asking you to try a runthrough, Thorny. After that, we'll see. But remember it's our only

chance of going on tonight."

"Andreyev," he breathed. "The lead."

"Please, Thorny, will you try?"

He looked around the theater, nodded slowly. "I'll go study my lines," he said quietly, inclining his head with what he hoped was just the proper expression of humble bravery.

*I've got to make it good, I've got to make it great. The last chance, the last great role—*

Glaring footlights, a faint whisper in his ear, and the cold panic of the first entrance. It came and passed quickly. Then the stage was a closed room, and the audience—of technicians and production personnel—was only the fourth wall, somewhere beyond the lights. He was Andreyev, commissioner of police, party whip, loyal servant of the regime, now tottering in the revolutionary storm of the Eighties. The last Bolshevik, no longer a rebel, no longer a radical, but now the loyalist, the conservatist, the defender of the status quo, champion of the Marxist ruling classes. No longer conscious of a self apart from that of the role, he lived the role. And the others, the people he lived it with, the people whose feet crackled faintly as they stepped across the floor, he acted and reacted with them and against them as if they, too, shared life, and while the play progressed he forgot their lifelessness for a little time.

Caught up by the magic, enfolded

in scheme of the inevitable, borne along by the tide of the drama, he felt once again the sense of belonging as a part in a whole, a known and predictable whole that moved as surely from scene *i* to the final curtain as man from womb to tomb, and there were no lost years, no lapse or sense of defeated purpose between the rehearsals of those many years ago and this the fulfillment of opening night. Only when at last he muffed a line, and Rick's correction whispered in his ear did the spell that was gathered about him briefly break—and he found himself unaccountably frightened, frightened by the sudden return of realization that all about him was Machine, and frightened, too, that he had forgotten. He had been conforming to the flighty mechanical grace of the others, reflexively imitating the characteristic lightness of the mannequins' movements, the dancelike qualities of their playing. To know suddenly, having forgotten it, that the mouth he had just kissed was not a woman's, but the rubber mouth of a doll, and that dancing patterns of high frequency waves from the Maestro had controlled the solenoid currents that turned her face lovingly up toward his, had lifted the cold soft hands to touch his face. The faint rubbery smell-taste hung about his mouth.

When his first exit came, he went off trembling. He saw Jade coming toward him, and for an instant, he felt a horrifying certainty that she would

say, "Thorny, you were almost as good as a mannequin!" Instead, she said nothing, but only held out her hand to him.

"Was it too bad, Jade?"

"Thorny, you're in! Keep it up, and you might have more than a one-night stand. Even Ian's convinced. He squealed at the idea, but now he's sold."

"No kicks? How about the lines with Piotr?"

"Wonderful. Keep it up. Darling, you were marvelous."

"It's settled, then?"

"Darling, it's *never* settled until the curtain comes up. You know that." She giggled. "We had one *kick* all right—or maybe I shouldn't tell you."

He stiffened slightly. "Oh? Who from?"

"Mela Stone. She saw you come on, turned white as a sheet, and walked out. I can't imagine!"

He sank slowly on a haggard looking couch and stared at her. "The hell you can't," he grated softly.

"She's here on a personal appearance contract, you know. To give an opening and an intermission commentary on the author and the play." Jade smirked at him gleefully. "Five minutes ago she called back, tried to cancel her appearance. Of course, she can't pull a stunt like that. Not while Smithfield owns her."

Jade winked, patted his arm, tossed an uncoded copy of the script at him, then headed back toward the orches-

tra. Briefly he wondered what Jade had against Mela. Nothing serious, probably. Both had been actresses. Mela got a Smithfield contract; Jade didn't get one. It was enough.

By the time he had reread the scene to follow, his second cue was approaching, and he moved back toward the stage.

Things went smoothly. Only three times during the first act did he stumble over lines he had not rehearsed in ten years. Rick's prompting was in his ear, and the Maestro could compensate to some extent for his minor deviations from the script. This time he avoided losing himself so completely in the play; and this time the weird realization that he had become one with the machine-set pattern did not disturb him. This time he remembered, but when the first break came—

"Not quite so good, Thorny," Ian Feria called. "Whatever you were doing in the first scene, do it again. That was a little wooden. Go through that last bit again, and play it down. Andreyev's no mad bear from the Urals. It's Marka's moment, anyhow. Hold in."

He nodded slowly and looked around at the frozen dolls. He had to forget the machinery. He had to lose himself in it and live it, even if it meant being a replacement link in the mechanism. It disturbed him somehow, even though he was accustomed to subordinating himself to the total gestalt of the scene as in other days. For no apparent reason, he found

himself listening for laughter from the production people, but none came.

"All right," Feria called. "Bring 'em alive again."

He went on with it, but the uneasy feeling nagged at him. There was self-mockery in it, and the expectation of ridicule from those who watched. He could not understand why, and yet—

There was an ancient movie—one of the classics—in which a man named Chaplin had been strapped into a seat on a production line where he performed a perfectly mechanical task in a perfectly mechanical fashion, a task that could obviously have been done by a few cams and a linkage or two, and it was one of the funniest comedies of all times—yet tragic. A task that made him a part in an overall machine.

He sweated through the second and third acts in a state of compromise with himself—overplaying it for purposes of self-preparation, yet trying to convince Feria and Jade that he could handle it and handle it well. Overacting was necessary in spots, as a learning technique. Deliberately ham up the rehearsal to impress lines on memory, then underplay it for the real performance—it was an old trick of troupers who had to do a new show each night and had only a few hours in which to rehearse and learn lines. But would they know why he was doing it?

When it was finished, there was no time for another run-through, and

scarcely time for a nap and a bite to eat before dressing for the show.

"It was terrible, Jade," he groaned. "I muffed it. I know I did."

"Nonsense. You'll be in tune tonight, Thorny. I knew what you were doing, and I can see past it."

"Thanks. I'll try to pull in."

"About the final scene, the shooting—"

He shot her a wary glance. "What about it?"

"The gun'll be loaded tonight, blanks, of course. And this time you'll have to fall."

"So?"

"So be careful where you fall. Don't go down on the copper bus-lugs. A hundred and twenty volts mightn't kill you, but we don't want a dying Andreyev bouncing up and spitting blue sparks. The stagehands'll chalk out a safe section for you. And one other thing—"

"Yes?"

"Marka fires from close range. Don't get burned."

"I'll watch it."

She started away, then paused to frown back at him steadily for several seconds. "Thorny, I've got a queer feeling about you. I can't place it exactly."

He stared at her evenly, waiting.

"Thorny, are you going to wreck the show?"

His face showed nothing, but something twisted inside him. She looked beseeching, trusting, but worried. She

was counting on him, placing faith in him—

"Why should I botch up the performance, Jade? Why should I do a thing like that?"

"I'm asking you."

"O.K. I promise you—you'll get the best Andreyev I can give you."

She nodded slowly. "I believe you. I didn't doubt *that*, exactly."

"Then what worries you?"

"I don't know. I know how you feel about autodrama. I just got a shuddery feeling that you had something up your sleeve. That's all. I'm sorry. I know you've got too much integrity to wreck your own performance, but—" She stopped and shook her head, her dark eyes searching him. She was still worried.

"Oh, all right. I was going to stop the show in the third act. I was going to show them my appendectomy scar, do a couple of card tricks, and announce that I was on strike. I was going to walk out." He clucked his tongue at her, looked hurt.

She flushed slightly, and laughed. "Oh, I know you wouldn't pull anything shabby. Not that you wouldn't do anything you *could* to take a swat at autodrama generally, but . . . there's nothing you could do tonight that would accomplish anything. Except sending the customers home mad. That doesn't fit you, and I'm sorry I thought of it."

"Thanks. Stop worrying. If you lose dough, it won't be my fault."

"I believe you, but—"

"But what?"

She leaned close to him. "But you look too triumphant, that's what!" she hissed, then patted his cheek.

"Well, it's my last role. I—"

But she had already started away, leaving him with his sandwich and a chance for a nap.

Sleep would not come. He lay fingering the .32 caliber cartridges in his pocket and thinking about the impact of his final exit upon the conscience of the theater. The thoughts were pleasant.

It struck him suddenly as he lay drowsing that they would call it suicide. How silly. Think of the jolting effect, the dramatic punch, the audience reaction. Mannequins don't bleed. And later, the headlines: Robot Player Kills Old Trouper, Victim of Mechanized Stage. Still, they'd call it suicide. How silly.

But maybe that's what the paranoid on the twentieth story window ledge thought about, too—the audience reaction. Wasn't every self-inflicted wound really aimed at the conscience of the world?

It worried him some, but—

*"Fifteen minutes until curtain,"* the sound system was croaking. *"Fifteen minutes—"*

"Hey, Thorny!" Feria called irritably. "Get back to the costuming room. They've been looking for you."

He got up wearily, glanced around at the backstage bustle, then shuffled

away toward the make-up department. One thing was certain: he had to go on.

The house was less than packed. A third of the customers had taken refunds rather than wait for the postponed curtain and a substitute Andreyev, a substitute unknown or ill-remembered at best, with no Smithy index rating beside his name in lights. Nevertheless, the bulk of the audience had planned their evenings and stayed to claim their seats with only suppressed bad humor about the delay. Scalpers' customers who had overpaid and who could not reclaim more than half the bootleg price from the box-office were forced to accept the show or lose money and get nothing. They

came, and shifted restlessly, and glanced at their watches while an m.c.'s voice made apologies and introduced orchestral numbers, mostly from the Russian composers. Then, finally—

"Ladies and gentlemen, tonight we have with us one of the best loved actresses of stage, screen, and auto-drama, co-star of our play tonight, as young and lovely as she was when first immortalized by Smithfield—*Mela Stone!*"

Thornier watched tight-lipped from shadows as she stepped gracefully into the glare of the footlights. She seemed abnormally pale, but make-up artistry had done a good job; she looked only slightly older than her doll, still lovely, though less arrogantly beautiful. Her



flashing jewelry was gone, and she wore a simple dark gown with a deep-slit neck, and her tawny hair was wrapped high in a turbanlike coiffure that left bare a graceful neck.

"Ten years ago," she began quietly, "I rehearsed for a production of 'The Anarch' which never appeared, rehearsed it with a man named Ryan Thornier in the starring role, the actor who fills that role tonight. I remember with a special sort of glow the times—"

She faltered, and went on lamely. Thorny winced. Obviously the speech had been written by Jade Ferne and evidently the words were like bits of poisoned apples in Mela's mouth. She gave the impression that she was speaking them only because it wasn't polite to retch them. Mela was being punished for her attempt to back out, and Jade had forced her to appear only by threatening to fit out the Stone mannequin with a gray wig and have the doll read her curtain speeches. The small producer had a vicious streak, and she exercised it when crossed.

Mela's introductory lines were written to convince the audience that it was indeed lucky to have Thornier instead of Peltier, but there was nothing to intimate his flesh-and-blood status. She did not use the words "doll" or "mannequin," but allowed the audience to keep its preconceptions without confirming them. It was short. After a few anecdotes about the show's first presentation more than a

generation ago, she was done.

"And with no further delay, my friends, I give you—Pruchev's 'The Anarch.'"

She bowed away and danced behind the curtains and came off crying. A majestic burst of music heralded the opening scene. She saw Thornier and stopped, not yet off stage. The curtain started up. She darted toward him, hesitated, stopped to stare up at him apprehensively. Her eyes were brimming, and she was biting her lip.

On stage, a telephone jangled on the desk of Commissioner Andreyev. His cue was still three minutes away. A lieutenant came on to answer the phone.

"Nicely done, Mela," he whispered, smiling sourly.

She didn't hear him. Her eyes drifted down to his costume—very like the uniform he'd worn for a dress rehearsal ten years ago. Her hand went to her throat. She wanted to run from him, but after a moment she got control of herself. She looked at her own mannequin waiting in the line-up, then at Thornier.

"Aren't you going to say something appropriate?" she hissed.

"I—" His icy smile faded slowly. The first small triumph—triumph over Mela, a sick and hag-ridden Mela who had bought security at the expense of integrity and was still paying for it in small installments like this, Mela whom he once had loved. The first small "triumph" coiled into a sick

knot in his throat.

She started away, but he caught her arm.

"I'm sorry, Mela," he muttered hoarsely. "I'm really sorry."

"It's not your fault."

But it was. She didn't know what he'd done, of course; didn't know he'd switched the tapes and steered his own selection as a replacement for the Peltier doll, so that she'd have to watch him playing opposite the doll-image of a Mela who had ceased to exist ten years ago, watch him relive a mockery of something.

"I'm sorry," he whispered again.

She shook her head, pulled her arm free, hurried away. He watched her go and went sick inside. Their frigid meeting earlier in the day had been the decisive moment, when in a surge of bitterness he'd determined to go through with it and even excuse himself for doing it. Maybe bitterness had fogged his eyesight, he thought. Her reaction to bumping into him that way hadn't been snobbery; it had been horror. An old ghost in dirty coveralls and motley, whose face she'd probably fought to forget, had sprung up to confront her in a place that was too full of memories anyhow. No wonder she seemed cold. Probably he symbolized some of her own self-accusations, for he knew he had affected others that way. The successful ones, the ones who had profited by autodrama—they often saw him with mop and bucket, and if they remembered Ryan

Thornier, turned quickly away. And at each turning away, he had felt a small glow of satisfaction as he imagined them thinking: *Thornier wouldn't compromise*—and hating him, because they had compromised and lost something thereby. But being hated by Mela—was different somehow. He didn't want it.

Someone nudged his ribs. "Your cue, Thorny!" hissed a tense voice. "You're *on*!"

He came awake with a grunt. Feria was shoving him frantically toward his entrance. He made a quick grab for his presence of mind, straightened into character, and strode on.

He muffed the scene badly. He knew that he muffed it even before he made his exit and saw their faces. He had missed two cues and needed prompting several times from Rick in the booth. His acting was wooden—he felt it.

"You're doing fine, Thorny, just fine!" Jade told him, because there was nothing else she *dared* tell him during a performance. Shock an actor's ego during rehearsal, and he had time to recover; shock it during a performance, and he might go sour for the night. He knew, though, without being told, the worry that seethed behind her mechanical little smile. "But just calm down a little, eh?" she advised. "It's going fine."

She left him to seethe in solitude. He leaned against the wall and glow-

ered at his feet and flagellated himself. *You failure, you miserable crumb, you janitor-at-heart, you stage-struck charwoman—*

He had to straighten out. If he ruined this one, there'd never be another chance. But he kept thinking of Mela, and how he had wanted to hurt her, and how now that she was being hurt he wanted to stop.

"Your cue, Thorny—wake up!"

And he was on again, stumbling over lines, being terrified of the sea of dim faces where a fourth wall should be.

She was waiting for him after his second exit. He came off pale and shaking, perspiration soaking his collar. He leaned back and lit a cigarette and looked at her bleakly. She couldn't talk. She took his arm in both hands and kneaded it while she rested her forehead against his shoulder. He gazed down at her in dismay. She'd stopped feeling hurt; she couldn't feel hurt when she watched him make a fool of himself out there. She might have been vengefully delighted by it, and he almost wished that she were. Instead, she was pitying him. He was numb, sick to the core. He couldn't go on with it.

"Mela, I'd better tell *you*; I can't tell Jade what I—"

"Don't talk, Thorny. Just do your best." She peered up at him. "Please do your best?"

It startled him. Why should she feel that way?

"Wouldn't you really rather see me flop?" he asked.

She shook her head quickly, then paused and nodded it. "Part of me would, Thorny. A vengeful part. I've got to believe in the automatic stage. I . . . I do believe in it. But I don't want you to flop, not really." She put her hands over her eyes briefly. "You don't know what it's like seeing you out there . . . in the middle of all that . . . that—" She shook herself slightly. "It's a mockery, Thorny, you don't belong out there, but—as long as you're there, don't muff it. Do your best?"

"Yeah, sure."

"It's a precarious thing. The effect, I mean. If the audience starts realizing you're not a doll—" She shook her head slowly.

"What if they do?"

"They'll laugh. They'll laugh you right off the stage."

He was prepared for anything but that. It confirmed the nagging hunch he'd had during the run-through.

"Thorny, that's all I'm really concerned about. I don't care whether you play it well or play it lousy, as long as they don't find out what you are. I don't want them to laugh at you; you've been hurt enough."

"They wouldn't laugh if I gave a good performance."

"But they *would!* Not in the same way, but they would. Don't you see?"

His mouth fell open. He shook his head. It wasn't true. "Human actors

have done it before," he protested. "In the sticks, on small stages with undersized Maestros."

"Have you ever seen such a play?"

He shook his head.

"I have. The audience knows about the human part of the cast in advance. So it doesn't strike them as funny. There's no jolt of discovering an incongruity. Listen to me Thorny—do your best, but you don't dare make it *better* than a doll could do."

Bitterness came back in a flood. Was this what he had hoped for? To give as machinelike a performance as possible, to do as good a job as the Maestro, but no better, and above all, *no different?* So that they wouldn't find out?

She saw his distressed expression and felt for his hand. "Thorny, don't hate me for telling you. I want you to bring it off O.K., and I thought you ought to realize. I think I know what's been wrong. You're afraid—down deep—that they *won't* recognize you for who you are, and that makes your performance un-doll-like. You better start being afraid they will recognize you, Thorny."

As he stared at her, it began to penetrate that she was still capable of being the woman he'd once known and loved. Worse, she wanted to save him from being laughed at. Why? If she felt motherly, she might conceivably want to shield him against wrath, criticism, or rotten tomatoes. but not against loss-of-dignity. Motherliness

thrived on the demise of male dignity, for it sharpened the image of the child in the man.

"Mela—?"

"Yes, Thorny."

"I guess I never quite got over you."

She shook her head quickly, almost angrily.

"Darling, you're living ten years ago. I'm not, and I won't. Maybe I don't like the present very well, but I'm in it, and I can only change it in little ways. I can't make it the past again, and I won't try." She paused a moment, searching his face. "Ten years ago, we weren't living in the present either. We were living in a mythical, magic, wonderful future. Great talent, just starting to bloom. We were living in dream-plans in those days. The future we lived in never happened, and you can't go back and make it happen. And when a dream-plan stops being possible, it turns into a pipe dream. I won't live in a pipe dream. I want to stay sane, even if it hurts."

"Too bad you had to come tonight," he said stiffly.

She wilted. "Oh, Thorny, I didn't mean that the way it sounded. And I wouldn't say it that strongly unless"—she glanced through the soundproof glass toward the stage where her mannequin was on in the scene with Piotr—"unless I had trouble too, with too much wishing."

"I wish you were with me out there," he said softly. "With no dolls and no

Maestro. I know how it'd be then."

"Don't! Please, Thorny, don't."

"Mela, I loved you—"

"No!" She got up quickly. "I . . . I want to see you after the show. Meet me. But don't talk that way. Especially not here and not now."

"I can't help it."

"Please! Good-by for now, Thorny, and—do your best."

My best to be a mechanism, he thought bitterly as he watched her go.

He turned to watch the play. Something was wrong out there on the stage. Badly wrong. The Maestro's interpretation of the scene made it seem unfamiliar somehow. He frowned. Rick had spoken of the Maestro's ability to compensate, to shift interpretations, to redirect. Was that what was happening? The Maestro compensating—for *his* performance?

His cue was approaching. He moved closer to the stage.

Act I had been a flop. Feria, Ferne, and Thomas conferred in an air of tension and a haze of cigarette smoke. He heard heated muttering, but could not distinguish words. Jade called a stagehand, spoke to him briefly, and sent him away. The stagehand wandered through the group until he found Mela Stone, spoke to her quickly and pointed. Thorny watched her go to join the production group, then turned away. He slipped out of their line-of-sight and stood behind some folded backdrops, waiting for the end

of a brief intermission and trying not to think.

"Great act, Thorny," a costumer said mechanically, and clapped his shoulder in passing.

He suppressed an impulse to kick the costumer. He got out a copy of the script and pretended to read his lines. A hand tugged at his sleeve.

"Jade!" He looked at her bleakly, started to apologize.

"Don't," she said. "We've talked it over. Rick, you tell him."

Rick Thomas who stood beside her grinned ruefully and wagged his head. "It's not altogether your fault, Thorny. Or haven't you noticed?"

"What do you mean?" he asked suspiciously.

"Take scene five, for example," Jade put in. "Suppose the cast had been entirely human. How would you feel about what happened?"

He closed his eyes for a moment and relived it. "I'd probably be sore," he said slowly. "I'd probably accuse Kovrin of jamming my lines and Aksinya of killing my exit—as an excuse," he added with a lame grin. "But I can't accuse the dolls. They can't steal."

"As a matter of fact, old man, they *can*," said the technician. "And your excuse is exactly right."

"Whh—what?"

"Sure. You *did* muff the first scene or two. The audience reacted to it. And the Maestro reacts to audience-reaction—by compensating through

shifts in interpretation. It sees the stage as a whole, you included. As far as the Maestro's concerned, you're an untaped dud—like the Peltier doll we used in the first run-through. It sends you only the script-tape signals, uninterpreted. Because it's got no analogue tape on you. Now without an audience, that'd be O.K. But with an audience reaction to go by, it starts compensating, and since it can't compensate through *you*, it works on the others."

"I don't understand."

"Bluntly, Thorny, the first scene or two stunk. The audience didn't like you. The Maestro started compensating by emphasizing other roles—and recharacterizing *you*, through the others."

"Recharacterize? How can it do that?"

"Easily, darling," Jade told him. "When Marka says 'I hate him; he's a beast'—for example—she can say it like it's true, or she can say it like she's just temporarily furious with Andreyev. And it affects the light in which the audience see you. Other actors affect *your* role. You know that's true of the old stage. Well, it's true of autodrama, too."

He stared at them in amazement. "Can't you stop it? Readjust the Maestro, I mean?"

"Not without clearing the whole thing out of the machine and starting over. The effect is cumulative. The more it compensates, the tougher it

gets for you. The tougher it gets for you, the worse you look to the crowd. And the worse you look to the crowd, the more it tries to compensate."

He stared wildly at the clock. Less than a minute until the first scene of Act II. "What'll I do?"

"Stick it," said Jade. "We've been on the phone to Smithfield. There's a programming engineer in town, and he's on his way over in a heliocab. Then we'll see."

"We may be able to nurse it back in tune," Rick added, "a little at a time—by feeding in a fake set of audience-restlessness factors, and cutting out its feeler circuits out in the crowd. We'll try, that's all."

The light flashed for the beginning of the act.

"Good luck, Thorny."

"I guess I'll need it." Grimly he started toward his entrance.

The thing in the booth was watching him. It watched and measured and judged and found wanting. *Maybe*, he thought wildly, *it even hated him*. It watched, it planned, it regulated, and it was wrecking him.

The faces of the dolls, the hands, the voices—belonged to *it*. The wizard circuitry in the booth rallied them against him. It saw him, undoubtedly, as one of them, but not answering to its pulsing commands. It saw him, perhaps, as a malfunctioning doll, and it tried to correct the effects of his misbehavior. He thought of the old

conflict between director and darsteller, the self-directed actor—and it was the same conflict, aggravated by an electronic director's inability to understand that such things could be. The darsteller, the undirectable portrayer whose acting welled from unconscious sources with no external strings—directors were inclined to hate them, even when the portrayal was superb. A mannequin, however, was the perfect schauspieler, the actor that a director could play like an instrument.

It would have been easier for him now had he been a schauspieler, for perhaps he could adapt. But he was Andreyev, *his* Andreyev, as he had prepared himself for the role. Andreyev was incarnate as an *alter anima* within him. He had never "played" a role. He had always become the role. And now he could adapt to the needs of the moment on stage only as Andreyev, in and through his identity with Andreyev, and without changing the feel of his portrayal. To attempt it, to try to fall into conformity with what the Maestro was doing, would mean utter confusion. Yet, the machine was forcing him—through the others.

He stood stonily behind his desk, listening coldly to the denials of the prisoner—a revolutionary, an arsonist associated with Piotr's guerrilla band.

"I tell you, Comrade, I had nothing to do with it!" the prisoner shouted. "Nothing!"

"Haven't you questioned him thor-

oughly?" Andreyev growled at the lieutenant who guarded the man. "Hasn't he signed a confession?"

"There was no need, Comrade. His accomplice confessed," protested the lieutenant.

Only it wasn't supposed to be a protest. The lieutenant made it sound like a monstrous thing to do—to wring another confession, by torture perhaps, from the prisoner, when there was already sufficient evidence to convict. The words were right, but their meaning was wrenching. It should have been a crisp statement of fact: No need, Comrade; his accomplice confessed.

Thorny paused, reddening angrily. His next line was, "See that this one confesses, too." But he wasn't going to speak it. It would augment the effect of the lieutenant's tone of shocked protest. He thought rapidly. The lieutenant was a bit-player, and didn't come back on until the third act. It wouldn't hurt to jam him.

He glowered at the doll, demanded icily: "And what have you done with the accomplice?"

The Maestro could not invent lines, nor comprehend an ad lib. The Maestro could only interpret a deviation as a malfunction, and try to compensate. The Maestro backed up a line, had the lieutenant repeat his cue.

"I told you—he confessed."

"So!" roared Andreyev. "You killed him, eh? Couldn't survive the

questioning, eh? And you killed him."

*Thorny, what are you doing?* came Rick's frantic whisper in his earplug.

"He confessed," repeated the lieutenant.

"You're under arrest, Nichol!" Thorny barked. "Report to Major Malin for discipline. Return the prisoner to his cell." He paused. The Maestro couldn't go on until he cued it, but now there was no harm in speaking the line. "Now—see that this one confesses, too."

"Yes, sir," the lieutenant replied stonily, and started off-stage with the prisoner.

Thorny took glee in killing his exit by calling after him: "And see that he lives through it!"

The Maestro marched them out without looking back, and Thorny was briefly pleased with himself. He caught a glimpse of Jade with her hands clasped over her head, giving him a "the-winnah" signal from concealment. But he couldn't keep ad libbing his way out of it every time.

Most of all, he dreaded the entrance of Marka, Mela's doll. The Maestro was playing her up, ennobling her, subtly justifying her treachery, at the expense of Andreyev's character. He didn't want to fight back. Marka's role was too important for tampering, and besides, it would be like slapping at Mela to confuse the performance of her doll.

The curtain dipped. The furniture

revolved. The stage became a living room. And the curtain rose again.

He barked: "No more arrests; after curfew, shoot on sight!" at the telephone, and hung up.

When he turned, she stood in the doorway, listening. She shrugged and entered with a casual walk while he watched her in suspicious silence. It was the consummation of her treachery. She had come back to him, but as a spy for Piotr. He suspected her only of infidelity and not of treason. It was a crucial scene, and the Maestro could play her either as a treacherous wench, or a reluctant traitor with Andreyev seeming a brute. He watched her warily.

"Well—hello," she said petulantly, after walking around the room.

He grunted coldly. She stayed fliprant and aloof. So far, it was as it should be. But the vicious argument was yet to come.

She went to a mirror and began straightening her windblown hair. She spoke nervously, compulsively, rattling about trivia, concealing her anxiety in his presence after her betrayal. She looked furtive, haggard, somehow more like the real Mela of today; the Maestro's control of expression was masterful.

"What are you doing here?" he exploded suddenly, interrupting her disjointed spiel.

"I still live here, don't I?"

"You got out."

"Only because you ordered me out."

"You made it clear you wanted to leave."

"Liar!"

"Cheat!"

It went on that way for a while; then he began dumping the contents of several drawers into a suitcase.

"I live here, and I'm staying," she raged.

"Suit yourself, Comrade."

"What're you doing?"

"Moving out, of course."

The battle continued. Still there was no attempt by the Maestro to revise the scene. Had the trouble been corrected? Had his exchange with the lieutenant somehow affected the machine? Something was different. It was becoming a good scene, his best so far.

She was still raving at him when he started for the door. She stopped in mid-sentence, breathless—then shrieked his name and flung herself down on the sofa, sobbing violently. He stopped. He turned and stood with his fists on his hips staring at her. Gradually, he melted. He put the suitcase down and walked back to stand over her, still gruff and glowering.

Her sobbing subsided. She peered up at him, saw his inability to escape, began to smile. She came up slowly, arms sliding around his neck.

"Sasha . . . oh, my Sasha—"

The arms were warm, the lips moist, the woman alive in his embrace. For a moment he doubted his senses. She giggled at him and whispered, "You'll break a rib."

"Mela—"

"Let go, you fool—the scene!" Then, aloud: "Can I stay, darling?"

"Always," he said hoarsely.

"And you won't be jealous again?"

"Never."

"Or question me everytime I'm gone an hour or two?"

"Or sixteen. It was sixteen hours."

"I'm sorry." She kissed him. The music rose. The scene ended.

"How did you swing it?" he whispered in the clinch. "And why?"

"They asked me to. Because of the Maestro." She giggled. "You looked devastated. Hey, you can let go now. The curtain's down."

The mobile furniture had begun to rearrange itself. They scurried off-stage, side-stepping a couch as it rolled past. Jade was waiting for them.

"Great!" she whispered, taking their hands. "That was just great."

"Thanks . . . thanks for sliding me in," Mela answered.

"Take it from here out, Mela—the scenes with Thorny, at least."

"I don't know," she muttered. "It's been so long. Anybody could have ad libbed through that fight scene."

"You can do it. Rick'll keep you cued and prompted. The engineer's here, and they're fussing around with the Maestro. But it'll straighten *itself* out, if you give it a couple more scenes like that to watch."

The second act had been rescued. The supporting cast was still a hazard,

and the Maestro still tried to compensate according to audience reaction during Act I, but with a human Marka, the compensatory attempts had less effect, and the interpretive distortions seemed to diminish slightly. The Maestro was piling up new data as the play continued, and reinterpreting.

"It wasn't great," he sighed as they stretched out to relax between acts. "But it was passable."

"Act Three'll be better, Thorny," Mela promised. "We'll rescue it yet. It's just too bad about the first act."

"I wanted it to be tops," he breathed. "I wanted to give them something to think about, something to remember. But now we're fighting to rescue it from being a total flop."

"Wasn't it always like that? You get steamed up to make history, but then you wind up working like crazy just to keep it passable."

"Or to keep from ducking flying groceries sometimes."

She giggled. "Jiggle used to say, 'I went on like the main dish and came off like the toss salad.'" She paused, then added moodily: "The *tough* part of it is—you've *got* to aim high just to hit anywhere at all. It can get to be heartbreaking, too—trying for the sublime every time, and just escaping the ridiculous, or the mediocre."

"No matter how high you aim, you can't hit escape velocity. Ambition is a trajectory with its impact point in oblivion, no matter how high the throw."

"Sounds like a quote."

"It is. From the Satyricon of an ex-Janitor."

"Thorny—?"

"What?"

"I'm going to be sorry tomorrow—but I *am* enjoying it tonight—going through it all again I mean. Living it like a pipe dream. It's no good though. It's opium."

He stared at her for a moment in surprise, said nothing. Maybe it was opium for Mela, but she hadn't started out with a crazy hope that tonight would be the climax and the high-point of a lifetime on the stage. She was filling in to save the show, and it meant nothing to her in terms of a career she had deliberately abandoned. He, however, had hoped for a great portrayal. It *wasn't* great, though. If he worked hard at Act III, it might—as a whole—stand up to his performances of the past. Unless—

"Think anybody in the audience has guessed yet? About us, I mean?"

She shook her head. "Haven't seen any signs of it," she murmured drowsily. "People see what they expect to see. But it'll leak out tomorrow."

"Why?"

"Your scene with the lieutenant. When you ad libbed out of a jam. There's bound to be a drama critic or maybe a professor out there who read the play ahead of time, and started frowning when you pulled that off. He'll go home and look up his copy of the script just to make sure, and then

the cat's out."

"It won't matter by then."

"No."

She wanted a nap or a drowse, and he fell silent. As he watched her relax, some of his bitter disappointment slipped away. It was good just to be acting again, even for one opiate evening. And maybe it was best that he wasn't getting what he wanted. He was even ready to admit to a certain insanity in setting out on such a course.

Perfection and immolation. Now that the perfection wasn't possible, the whole scheme looked like a sick fanatic's nightmare, and he was ashamed. Why had he done it—given in to what had always been only a petulant fantasy, a childish dream? The wish, plus the opportunity, plus the impulse, in a framework of bitterness and in a time of personal transition—it had been enough to bring the crazy yearning out of its cortical wrinkle and start him acting on a dream. A child's dream.

And then the momentum had carried him along. The juggled tapes, the loaded gun, the dirty trick on Jade—and now fighting to keep the show from dying. He had gone down to the river and climbed up on the bridge rail and looked down at the black and swirling tide—and finally climbed down again because the wind would spoil his swan dive.

He shivered. It scared him a little, to know he could lose himself so easily. What had the years done to him, or

what had he done to himself?

He had kept his integrity maybe, but what good was integrity in a vacuum? He had the soul of an actor, and he'd hung onto it when the others were selling theirs, but the years had wiped out the market and he was stuck with it. He had stood firm on principle, and the years had melted the cold glacier of reality from under the principle; still, he stood on it, while the reality ran on down to the sea. He had dedicated himself to the living stage, and carefully tended its grave, awaiting the resurrection.

Old ham, he thought, you've been flickering into mad warps and staggering into dimensions of infrasanity. You took unreality by the hand and led her gallantly through peril and confusion and finally married her before you noticed that she was dead. Now the only decent thing to do was bury her, but her interment would do nothing to get him back through the peril and confusion and on the road again. He'd have to hike. Maybe it was too late to do anything with the rest of a lifetime. But there was only one way to find out. And the first step was to put some mileage between himself and the stage.

If a little black box took over my job, Rick had said, I'd go to work making little black boxes.

Thorny realized with a slight start that the technician had meant it. Mela had done it, in a sense. So had Jade.



Especially Jade. But that wasn't the answer for him, not now. He'd hung around too long mourning the dead, and he needed a clean, sharp break. Tomorrow he'd fade out of sight, move away, pretend he was twenty-one again, and start groping for something to do with a lifetime. How to keep eating until he found it—that would

be the pressing problem. Unskilled laborers were hard to find these days, but so were unskilled jobs. Selling his acting talent for commercial purposes would work only if he could find a commercial purpose he could believe in and live for, since his talent was not the surface talent of a *schauspieler*. It would be a grueling search, for he had

never bothered to believe in anything but theater.

Mela stirred suddenly. "Did I hear somebody call me?" she muttered. "This racket—!" She sat up to look around.

He grunted doubtfully. "How long till curtain?" he asked.

She arose suddenly and said, "Jade's waving me over. See you in the act, Thorny."

He watched Mela hurry away, he glanced across the floor at Jade who waited for her in the midst of a small conference, he felt a guilty twinge. He'd cost them money, trouble, and nervous sweat, and maybe the performance endangered the run of the show. It was a rotten thing to do, and he was sorry, but it couldn't be undone, and the only possible compensation was to deliver a best-possible Act III and then get out. Fast. Before Jade found him out and organized a lynch mob.

After staring absently at the small conference for a few moments, he closed his eyes and drowsed again.

Suddenly he opened them. Something about the conference group—something peculiar. He sat up and frowned at them again. Jade, Mela, Rick, and Feria, and three strangers. Nothing peculiar about that. Except . . . let's see . . . the thin one with the scholarly look—that would be the programming engineer, probably. The beefy, healthy fellow with the dark business suit and the wandering glance

—Thorthy couldn't place him—he looked out of place backstage. The third one seemed familiar somehow, but he, too, looked out of place—a chubby little man with no necktie and a fat cigar, he seemed more interested in the backstage rush than in the proceedings of the group. The beefy gent kept asking him questions, and he muttered brief answers around his cigar while watching the stagehands' parade.

Once when answering he took his cigar out of his mouth and glanced quickly across the floor in Thorny's direction. Thorny stiffened, felt bristles rise along his spine. The chubby little gent was—

—The depot clerk!

Who had issued him the extra tape and the splices. Who could put the finger on the trouble right away, and was undoubtedly doing it.

Got to get out. Got to get out fast. The beefy fellow was either a cop or a private investigator, one of several hired by Smithfield. Got to run, got to hide, got to—Lynch mob.

"Not through that door, buddy, that's the stage; what're you—Oh, Thorny! It's not time to go on."

"Sorry," he grunted at the prop man and turned away.

The light flashed, the buzzer sounded faintly.

"Now it's time," the prop man called after him.

Where was he going? And what good would it do?

"Hey, Thorny! The buzzer. Come back. It's line-up. You're on when the curtain lifts . . . hey!"

He paused, then turned around and went back. He went on-stage and took his place. She was already there, staring at him strangely as he approached.

"You didn't do it, did you, Thorny?" she whispered.

He gazed at her in tight-lipped silence, then nodded.

She looked puzzled. She looked at him as if he were no longer a person, but a peculiar object to be studied. Not scornful, nor angry, nor righteous—just puzzled.

"Guess I was nuts," he said lamely.

"Guess you were."

"Not too much harm done, though," he said hopefully.

"The wrong people saw the third act, Thorny. They walked out."

"Wrong people?"

"Two backers and a critic."

"Oh?"

He stood stunned. She stopped looking at him then and just stood waiting for the curtain to rise, her face showing nothing but a puzzled sadness. It wasn't her show, and she had nothing in it but a doll that would bring a royalty check or two, and now herself as a temporary substitute for the doll. The sadness was for him. Contempt he could have understood.

The curtain lifted. A sea of dim faces beyond the footlights. And he was Andreyev, chief of a Soviet police

garrison, loyalist servant of a dying cause. It was easy to stay in the role this time, to embed his ego firmly in the person of the Russian cop and live a little of the last century. For the ego was more comfortable there than in the skin of Ryan Thornier—a skin that might soon be sent to the tannery, judging the furtive glances that were coming from backstage. It might even be comfortable to remain Andreyev after the performance, but that was a sure way to get Napoleon Bonaparte for a roommate.

There was no change of setting between scenes *i* and *ii*, but only a dip of the curtain to indicate a time-lapse and permit a change of cast. He stayed on stage, and it gave him a moment to think. The thoughts weren't pleasant.

Backers had walked out. Tomorrow the show would close unless the morning teleprint of the *Times* carried a rave review. Which seemed wildly improbable. Critics were jaded. Jaded tastes were apt to be impatient. They would not be eager to forgive the first act. He had wrecked it, and he couldn't rescue it.

Revenge wasn't sweet. It tasted like rot and a sour stomach.

*Give them a good third act. There's nothing more you can do.* But even that wouldn't take away the rotten taste.

*Why did you do it, Thorny?* Rick's voice, whispering from the booth and in his earplug prompter.

He glanced up and saw the technician watching him from the small

window of the booth.' He spread his hands in a wide shrugging gesture, as if to ask: How can I tell you, what can I do?

*Go on with it, what else?* Rick whispered, and withdrew from the window.

The incident seemed to confirm that Jade intended for him to finish it, anyhow. She could scarcely intend otherwise. She was in it with him, in a sense. If the audience found out the play had a human stand-in, and if the critics didn't like the show, they might pounce on the producer who "perpetrated such an impossible substitution"—even harder than they'd pounce on him. She had gambled on him, and in spite of his plot to force her into such a gamble, it was her show, and her responsibility, and she'd catch the brunt of it. Critics, owners, backers, and public—they didn't care about "blame," didn't care about excuses or reasons. They cared about the finished product, and if they didn't like it, the responsibility for it was clear.

As for himself? A cop waiting backstage. Why? He hadn't studied the criminal code, but he couldn't think of any neat little felonious label that could be pinned on what he'd done. Fraud? Not without an exchange of money or property, he thought. He'd been after intangibles, and the law was an earthy thing; it became confused when motives carried men beyond assaults on property or person, into assaults on ideas or principles. Then it passed the buck to psychiatry.

Maybe the beefy gent wasn't a cop at all. Maybe he was a collector of maniacs.

Thorny didn't much care. The dream had tumbled down, and he'd just have to let the debris keep falling about him until he got a chance to start climbing out of the wreckage. It was the end of something that should have ended years ago, and he couldn't get out until it finished collapsing.

The curtain lifted. Scene *ii* was good. Not brilliant, but good enough to make them stop snapping their gum and hold them locked in their seats, absorbed in their identity with Andreyev.

Scene *iii* was his Gethsemane—when the mob besieged the public offices while he waited for word of Marka and an answer to his offer of a truce with the guerrilla forces. The answer came in one word.

"*Nyet.*"

His death sentence. The word that bound him over to the jackals in the streets, the word that cast him to the ravening mob. The mob had a way: the mob was collecting officials and mounting them. He could see their collection from the window, looking across the square, and he discussed it with an aide. Nine men impaled on the steel spikes of the heavy grillwork fence in front of the Regional Soviet offices. The mob seized another specimen with its thousand hands and mounted it carefully. It lifted the specimen into a sitting position over

a two-foot spike, then dropped him on it. Two specimens still squirmed.

He'd cheat the mob, or course. There were the barricades in the building below, and there would be plenty of time to meet death privately and chastely before the mob tore its way inside. But he delayed. He waited for word from Marka.

Word came. Two guards burst in.

"She's here, Comrade, she's come!"

Come with the enemy, they said. Come betraying him, betraying the state. *Impossible!* But the guard insisted.

Berserk fury, and refusal to believe. With a low snarl, he drew the automatic, shot the bearer of bad tidings through the heart.

With the crash of the gunshot, the mannequin crumpled. The explosion startled a sudden memory out of hiding, and he remembered: the second cartridge in the clip—not a blank! He had forgotten to unload the deadly round.

For an instant he debated firing it into the fallen mannequin as a way to get rid of it, then dismissed the notion and obeyed the script. He stared at his victim and wilted, letting the gun slip from his fingers and fall to the floor. He staggered to the window to stare out across the square. He covered his face with his hands, awaited the transition curtain.

The curtain came. He whirled and started for the gun.

*No, Thorny, no!* came Rick's frantic

whisper from the booth. *To the ikon . . . the ikon!*

He stopped in mid-stage. No time to retrieve the gun and unload. The curtain had only dipped and was starting up again. Let Mela get rid of the round, he thought. He crossed to the shrine, tearing open his collar, rumpling his hair. He fell to his knees before the ancient ikon, in dereliction before the God of an older Russia, a Russia that survived as firmly in fierce negation as it had survived in fierce affirmation. The cultural soul was a living thing, and it survived as well in downfall as in victory; it could never be excised, but only eaten away or slowly transmuted by time and gentle pressures of rain wearing the rock.

There was a bust of Lenin beneath the ikon. And there was a bust of Harvey Smithfield beneath the Greek players' masks on the wall of D'Uccia's office. The signs of the times, and the signs of the timeless, and the cultural heartbeat pulsed to the rhythm of centuries. He had resisted the times as they took a sharp turn in direction, but no man could swim long against the tide as it plodded its zigzag course into timelessness. And the sharp deflections in the course were deceptive—for all of them really wound their way downstream. No man ever added his bit to the flow by spending all his effort to resist the current. The tide would tire him and take him into oblivion while the world flowed on.

Marka, Boris, Piotr had entered, and he had turned to stare at them without understanding. The mockery followed, and the harsh laughter, as they pushed the once haughty but now broken chieftain about the stage like a dazed animal unable to respond. He rebounded from one to another of them, as they prodded him to dispel the trancelike daze.

"Finish your prayer, Comrade," said Mela, picking up the gun he'd dropped.

As he staggered close to Mela, he found his chance, and whispered quickly: "The gun, Mela—eject the first cartridge. Eject it, quickly."

He was certain she heard him, although she showed no reaction—unless the slight flicker of her eyes had been a quick glance at the gun. Had she understood? A moment later, another chance to whisper.

"The next bullet's real. Work the slide. Eject it."

He stumbled as Piotr pushed him, fell against a heavy couch, slid down, and stared at them. Piotr went to open the window and shout an offer to the mob below. A bull-roar arose from the herd outside. They hauled him to the window as a triumphal display.

"See, Comrade?" growled the guerrilla. "Your faithful congregation awaits you."

Marka closed the windows. "I can't stand that sight!" she cried.

"Take him to his people," the leader ordered.

"No—" Marka brought up the gun, shook her head fiercely. "I won't let you do that. Not to the mob."

Piotr growled a curse. "They'll have him anyway. They'll be coming up here to search."

Thorny stared at the actress with a puzzled frown. Still she hadn't ejected the cartridge. And the moment was approaching—a quick bullet to keep him from the mob, a bit of hot mercy flung hastily to him by the woman who had enthralled him and used him and betrayed him.

She turned toward him with the gun, and he began to back away.

"All right, Piotr—if they'll get him anyway—".

She moved a few steps toward him as he backed to a corner. *The live round, Mela, eject it!*

Then her foot brushed a copper bus-lug, and he saw the faint little jet of sparks. Eyes of glass, flesh of air-foam plastic, nerves of twitching electron streams.

Mela was gone. This was her doll. Maybe the real Mela couldn't stomach it after she'd found what he'd done, or maybe Jade had called her off after the first scene of the third act. A plastic hand held the gun, and a tiny flexible solenoid awaited the pulse that would tighten the finger on the trigger. Terror lanced through him.

*Cue, Thorny, cue!* whispered his earplug.

The doll had to wait for his protest before it could fire. It had to be cued.

His eyes danced about the stage, looking for a way out. Only an instant to decide.

He could walk over and take the gun out of the doll's hand without giving it a cue—betraying himself to the audience and wrecking the final moment of the show.

He could run for it, cue her, and hope she missed, falling after the shot. But he'd fall on the lugs that way, and come up shrieking.

*For God's sake, Thorny!* Rick was howling. *The cue, the cue!*

He stared at the gun and swayed slightly from side to side. The gun swayed with him—slightly out of phase. A second's delay, no more—

"Please, Marka—" he called, swaying faster.

The finger tensed on the trigger. The gun moved in a search pattern, as he shifted to and fro. It was risky. It had to be precisely timed. It was like dancing with a cobra. He wanted to flee.

*You faked the tape, you botched the show, you came out second best to a system you hated*, he reminded himself. *And you even loaded the gun. Now if you can't risk it—*

He gritted his teeth, kept up the irregular weaving motion, then—

"Please, Marka . . . no, no, *nooo!*"

A spiked fist hit him somewhere around the belt, spun him around, and dropped him. The sharp cough of the gun was only a part of the blow. Then

he was lying crumpled on his side in the chalked safety area, bleeding and cursing softly. The scene continued. He started to cry out, but checked the shout in his throat. Through a haze, he watched the others move on toward the finale, saw the dim sea of faces beyond the lights. Bullet punched through his side somewhere.

Got to stop squirming. Can't have a dead Andreyev floundering about like a speared fish on the stage. Wait a minute—just another minute—hang on.

But he couldn't. He clutched at his side and felt for the wound. Hard to feel through all the stickiness. He wanted to tear his clothes free to get at it and stop the bleeding, but that was no good either. They'd accept a mannequin fumbling slightly in a death agony, but the blood wouldn't go over so well. Mannequins didn't bleed. Didn't they see it anyway? They had to see it. Clever gimmick, they'd think. Tube of red ink, maybe. Realism is the milieu of—

He twisted his hand in his belt, drew it up strangle-tight around his waist. The pain got worse for a moment, but it seemed to slow the flow of blood. He hung onto it, gritting his teeth, waiting.

He knew about where it hit him, but it was harder to tell where it had come out. And what it had taken with it on the way. Thank God for the bleeding. Maybe he wasn't doing much of it inside.

He tried to focus on the rest of the

stage. Music was rising somewhere. Had they all walked off and left him? But no—there was Piotr, through the haze. Piotr approached his chair of office—heavy, ornate, antique. Once it had belonged to a noble of the czar. Piotr, perfectly cold young machine, in his triumph—inspecting the chair.

A low shriek came from backstage somewhere. Mela. Couldn't she keep her mouth shut for half a minute? Probably spotted the blood. Maybe the music drowned the squeal.

Piotr mounted the single step and turned. He sat down gingerly in the chair of empire, testing it, and smiling victory. He seemed to find the chair comfortable.

"I must keep this, Marka," he said.

Thorny wheezed a low curse at him. He'd keep it all right, until the times went around another twist in the long old river. And welcome to it—judging by the thundering applause.

And the curtain fell slowly to cover the window of the stage.

Feet tramped past him, and he croaked "Help!" a couple of times, but the feet kept going. The mannequins, marching off to their packing cases.

He got to his feet alone, and went black. But when the blackness dissolved, he was still standing there, so he staggered toward the exit. They were rushing toward him—Mela and Rick and a couple of the crew. Hands grabbed for him, but he fought them off.

"I'll walk by myself now!" he growled.

But the hands took him anyway. He saw Jade and the beefy gent, tried to lurch toward them and explain everything, but she went even whiter and backed away. *I must look a bloody mess*, he thought.

"I was trying to duck. I didn't want to—"

"Save your breath," Rick told him. "I saw you. Just hang on."

They got him onto a doll packing case, and he heard somebody yelling for a doctor from the departing audience, and then a lot of hands started scraping at his side and tugging at him.

"Mela—"

"Right here, Thorny. I'm here."

And after a while she was still there, but sunlight was spilling across the bed, and he smelled faint hospital odors. He blinked at her for several seconds before he found a voice.

"The show?" he croaked.

"They panned it," she said softly.

He closed his eyes again and groaned.

"But it'll make dough."

He blinked at her and gaped.

"Publicity. Terrific. Shall I read you the reviews?"

He nodded, and she reached for the papers. All about the madman who bled all over the stage. He stopped her halfway through the first article. It was enough. The audience had begun to catch on toward the last lines of the

play, and the paging of a surgeon had confirmed the suspicion.

"You missed the bedlam backstage," she told him. "It was quite a mess."

"But the show won't close?"

"How can it? With all the morbidity for pulling power. If it closes, it'll be with the Peltier performance to blame."

"And Jade—?"

"Sore. Plenty sore. Can you blame her?"

He shook his head. "I didn't want to hurt anybody. I'm sorry."

She watched him in silence for a moment, then: "You can't flounder around like you've been doing, Thorny without somebody getting hurt, without somebody hating your guts, getting trampled on. You just can't."

It was true. When you hung onto a piece of the past, and just hung onto it quietly, you only hurt yourself. But when you started trying to bludgeon a place for it in the present, you began knocking over the bystanders.

"Theater's dead, Thorny. Can't you believe that now?"

He thought about it a little, and shook his head. It wasn't dead. Only the form was changed, and maybe not permanently at that. He'd thought of it first last night, before the ikon. There were things of the times, and a few things that were timeless. The times came as a result of a particular human culture. The timeless came as a result

of any human culture at all. And Cultural Man was a showman. He created display windows of culture for an audience of men, and paraded his aspirations and ideals and purposes thereon, and the displays were necessary to the continuity of the culture, to the purposeful orientation of the species.

Beyond one such window, he erected an altar, and placed a priest before it to chant a liturgical description of the heart-reasoning of his times. And beyond another window, he built a stage and set his talking dolls upon it to live a dramaturgical sequence of wishes and woes of his times.

True, the priests would change, the liturgy would change, and the dolls, the dramas, the displays—but the windows would never—no never—be closed as long as Man outlived his members, for only through such windows could transient men see themselves against the background of a broader sweep, see man encompassed by Man. A perspective not possible without the windows.

Dramaturgy. Old as civilized Man. Outlasting forms and techniques and applications. Outlasting even current popular worship of the Great God Mechanism, who was temporarily enshrined while still being popularly misunderstood. Like the Great God Commerce of an earlier century, and the God Agriculture before him.

Suddenly he laughed aloud. "If they used human actors today, it

would be a pretty moldy display. Not even *true*, considering the times."

By the time another figure lounged in his doorway, he had begun to feel rather expansive and heroic-about it all. When a small cough caused him to glance up, he stared for a moment, grinned broadly, then called: "Ho, Richard! Come in. Here . . . sit down. Help me decide on a career, eh? Heh heh—" He waved the classified section and chuckled. "What kind of little black boxes can an old ham—"

He paused. Rick's expression was chilly, and he made no move to enter. After a moment he said: "I guess there'll always be a sucker to rerun this particular relay race."

"Race?" Thorny gathered a slow frown.

"Yeah. Last century, it was between a Chinese abacus operator and an IBM machine. They really had a race, you know."

"Now see here—"

"And the century before that, it was between a long-hand secretary and a typewriting machine."

"If you came here to—"

"And before that, the hand-weavers against the automatic looms."

"Nice to have seen you, Richard. On your way out, would you ask the nurse to—"

"Break up the looms, smash the machines, picket the offices with typewriters, keep adding machines out of China! So then what? Try to be a

better tool than a tool?"

Thorny rolled his head aside and glowered at the wall. "All right. I was wrong. What do you want to do? Gloat? Moralize?"

"No. I'm just curious. It keeps happening—a specialist trying to compete with a high-level specialist's tools. Why?"

"Higher level?" Thorny sat up with a snarl, groaned, caught at his side and sank back again, panting.

"Easy, old man," Rick said quietly. "Sorry. Higher organizational-level, I meant. Why do you keep on doing it?"

Thorny lay silent for a few moments, then: "Status jealousy. Even hawks try to drive other hawks out of their hunting grounds. Fight off competition."

"But you're no hawk. And a machine isn't competition."

"Cut it out, Rick. What did you come here for?"

Rick glanced at the toe of his shoe, snickered faintly, and came on into the room. "Thought you might need some help finding a job," he said. "When I looked in the door and saw you lying there looking like somebody's King Arthur, I got sore again." He sat restlessly on the edge of a chair and watched the old man with mingled sadness, irritation, and affection.

"You'd help me . . . find a job?"

"Maybe. A job, not a permanent niche."

"It's too late to find a permanent niche."

"It was too late when you were born, old man! There isn't any such thing—hasn't been, for the last century. Whatever you specialize in, another specialty will either gobble you up, or find a way to replace you. If you get what looks like a secure niche, somebody'll come along and wall you up in it and write your epitaph on it. And the more specialized a society gets, the more dangerous it is for the pure specialist. You think an electronic engineer is any safer than an actor? Or a ditch-digger?"

"I don't know. It's not fair. A man's career—"

"You've always got one specialty that's safe."

"What's that?"

"The specialty of creating new specialties. Continuously. Your own."

"But that's—" He started to protest, to say that such a concept belonged to the highly trained few, to the technical elite of the era, and that it wasn't specialization, but generalization. But why to the few? The specialty of creating new specialties—

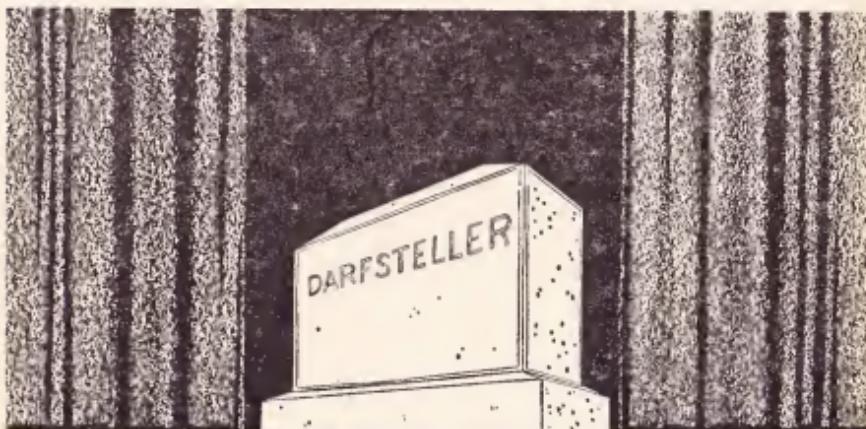
"But that's—"

"More or less a definition of Man, isn't it?" Rick finished for him. "Now about the job—"

"Yes, about the job—"

So maybe you don't start from the bottom after all, he decided. You start considerably above the lemur, the chimpanzee, the orangutan, the Maestro—if you ever start at all.

THE END





Illustrated by  
Van Dongen

# ARMISTICE

BY K. HOUSTON BRUNNER

*There can be times when the best-meant help is a menace, when understanding is to be avoided, and intolerance is needed . . . !*

They came for Kerguelen late one frosty night. He was expecting them.

Outside the house it was very quiet. There was no sound except faintly from Kerguelen's front room, where he sat alone listening to music that had been old when men had come here, until well-shod feet padded softly on the hard ground all around the house.

There was noise then, and bright yellow light from the floodlamps at four corners of a square in the garden.

Kerguelen heard the gentle chime of the door signal through a sweep of violins and woodwind. Now that it had happened, even though he had been awaiting it for almost three weeks, ever since Noorden was caught,

and had laid his plans for it, he still felt nervous. He stood up to switch off the record player, and saw that his hand was trembling. With a deep sigh he relaxed sufficiently to control it, but he could not slacken the tightness in his stomach.

The record went off, and there was silence in the house. Kerguelen passed the tip of his tongue over his dry lips, squared his shoulders, and went into the hallway.

When he opened the door, he blinked in the powerful beam of the light focused on him. He could only see the outline of the man who faced him, but the silhouette was square and unmistakable in its formal efficiency. He said, "Good evening."

"Evening," said the man in the blue uniform curtly. Kerguelen could not see that it was blue, but he knew it must be. "You are Ladislas Kerguelen?"

"Yes," Kerguelen admitted.

The man in the blue uniform moved his hand slightly, and out of the bushes that flanked the door two other men stepped up, one on each side of Kerguelen.

"You are under arrest," said Talbot.

Kerguelen looked at him in blank astonishment. He said, "What?" His voice was weak and unsteady, the voice of any man who is not certain that he has broken the law. "There must be some mistake—"

"I never make a mistake," said the silhouette, and though he tried not to

show it, Kerguelen's mind whirled. They had conferred quite an honor on him, then. Only one man could have used the first-person singular in quite that way. This then was Talbot—the custodian-in-chief.

"Inside," said Talbot, gesturing, and Kerguelen made obediently to re-enter the house. As he turned his back on the door he felt something sting his neck. It seemed to form a sphere of numbness which slowly englobed his head, and then grew roots that reached down his spine to the ganglia in his limbs, freezing them into stillness. In the short moment when he could yet feel, he let anger build up inside him at the idea that they should have used catatone on him. Just before the numbness hit his spine, the anger cooled into a grudging admission that they must have found out quite a lot about him if they were treating him so respectfully.

The man on his right caught him with practiced deftness as he fell. He saw the passage around him whirl dizzyly, and he was suddenly looking down at the floor over a hard, square shoulder. His eyes were open—fixed open for the time being—but since he could not feel, except as if through layer on layer of soft cloth, he was not troubled by the need to blink. Limply he lay on the shoulder, watching the floor go by and hearing the whispering pad of three pairs of foam soles walking. He was strangely a bodyless observer.

They came into the front room, and it whirled around him again as he was lowered into the chair he had just left. The man who had been carrying him leaned his head carefully on a pillow to keep it from dropping forward on his chest. They were taking no chances.

He could see, dimly, his arms being disposed in his lap and his legs being tidily crossed at the ankles. It was just the kind of position Kerguelen might have adopted for a friendly chat. But this was no friendly affair.

Talbot came and stood in front of him, and he took advantage of the chance to study this all but legendary figure. He saw a tall, well-built man in the dark blue uniform of the police, with shiny chromed facings and a treble row of decoration disks. The cuffs of his jerkin bore the silver cross of a chief custodian. That much Kerguelen had been expecting.

What he was not expecting was the face.

Talbot's hair was graying at the temples, and it was not the gray that some men of middle age affected to lend them an air of distinction. It was the nondescript genuine gray of a man who did not care enough for the way the world thought to have it tinted. It framed a lined, strong face with melancholy eyes that seemed as if they were never more than half opened—a face belonging to a scholar and a dreamer, not to the representative of the most authoritarian dictatorship in the history of man.

He had expected a cruel face, perhaps a weak one, perhaps even a brutal one, but not that of a man who knew the cares of a world were on his shoulders.

Eventually Talbot finished his scrutiny and turned away. Kerguelen recovered from the shock of seeing a man so different from the picture rumor painted. He could understand now why Talbot seldom showed himself in public—why he affected an air of arrogance and infallibility. It was because he was very much afraid he might be wrong.

Straining to follow the policemen's movements with his paralyzed eyes, he saw the two other men searching the room, each carrying a piece of something white in his hand—sketches, to judge from the way they kept consulting them and then doing something to the walls. He could guess what they were doing. Releasing the pattern of the room.

But that meant they must have known what he was when he came here. It wasn't the arrest of Noorden three weeks ago that had betrayed him. They must have had this house ready for him, known his tastes—primed the agent he bought it from, perhaps. And all the time he had been living here in what he thought was safety, he had been inside a monstrous trap—in the very maw of an animal waiting to close its jaws.

For that was what this room must be. Readied for him; tailored to his

mental pattern. A custom-built living organism for which there was now no further use, so the police were blanking out its senses. Eventually they would kill it completely, but that was a job for an expert. One man could render it useless, though. He could have, if he had known how to do it.

A feeling of sick failure should have arisen in him—would have, but for the catatone. All he could muster was a cold emotionless frustration, a kind of mental sigh of despair, and a question that burned and hammered in his skull. How much did Talbot know?

The room was dying around him without a sound.

The policemen were behind him now, and there were clicking noises. They were bringing out the data gathered in the walls.

Eventually one of the two said, "He is one, Mr. Talbot." There was very little satisfaction in his voice.

"Of course he is," answered Talbot irritably. "Get those records outside."

The policemen came into his line of vision again, carrying the silvery globes that were the memory cells of the room. Talbot followed them out. After a while, one of the policemen came back, picked Kerguelen up carefully, and spoke the word Kerguelen had thought was known only to himself. The lights faded slowly behind them.

They had considerably arranged a mirror above Kerguelen's forehead

and moved his eyes a little so that he could see what they were doing to his head. He was getting bored with it, although under catatone he could view it with detachment, and, if he could not feel tired, he longed at least to close his eyes.

Not that they were torturing him. Aside from the fact that they were not so crude and unsubtle, one does not torture a man under an anaesthetic. Though they had opened his skull and laid bare his brain, all they were after was the information his brain could give them.

When they were ready they sent for Talbot. The custodian-in-chief came into the clinic and walked around Kerguelen with the air of a man who knew precisely what had been done and could spot any faults in the doing of it. Eventually he nodded, satisfied, and said, "Let him talk."

Immediately he felt something push at his throat, and suddenly there was a patch of sensation in him. It extended from his jaws and tongue into his windpipe by way of his vocal cords, and he knew he could speak again. Moreover, if the doctors here knew their job, he not only could but would speak, for the injection almost certainly contained an anti-inhibitor slanted at the speech centers.

Talbot said, "Is your name Ladislas Kerguelen?"

"Yes," said Kerguelen, finding difficulty in loosening his tongue.

Talbot's eyes flashed up to a spot

behind Kerguelen's head. Kerguelen knew there must be a brain-plot there—an electronic map of his mind written on a thousand cathode-ray tubes—and that Talbot could read it like a book.

"Your'e lying," said Talbot unemotionally. "But there's no value in trying to find out your real name. It wouldn't mean anything to me even if I could pronounce it, which I probably couldn't."

He knows something, anyway, thought Kerguelen sickly, and immediately hoped that Talbot hadn't caught the fleeting emotion.

"Are you a spy?" said Talbot.

"No," said Kerguelen.

"Lying," said Talbot. Kerguelen was aware of the faint hum of a sound recorder.

"Do you know a man called Pietr Noorden?"

"Never heard the name."

"Lying. When did you see him last? Within the month?"

"Never saw him."

"Did you see him within the last Month?" Talbot repeated patiently.

"No," said Kerguelen.

"True. Within two months?"

"Never saw him!"

"Lying. Within two months?"

"No!"

"Lying. He has seen Noorden since two months ago. Was it on the—eighth of the month before last?"

"No."

"True. The ninth?"

"No."

"True. The tenth?"

That was the beauty of this system of questioning. When one had enough negatives, there was only a positive left, and though Kerguelen might try to delay the inevitable with obviously false rather than incriminatingly false answers, the anti-inhibitor had done its work well. It took only minutes for him to be answering questions like a machine.

They had taken his lie-pattern from his room, of course, and that made it easy.

After a while Kerguelen's mind dissociated itself from the questioning, and though he knew he was still lying consistently, he found himself able to think separately of Talbot and wonder about him. But no matter how he tried, he could only think of one thing. How much did Talbot know?

When Talbot had finished with Noorden, the questions took a new turn, and Kerguelen found his attention drawn back with a start. Talbot said, "Are you a man?"

"Yes," said Kerguelen.

"True," noted Talbot. "Noorden said he was a man, too. But there's one point.

"Kerguelen, listen to me. When I say I am a man, I mean that I am a member of the race of which I am a member. Would it mean that we are members of the same race if you said you were a man?"

Kerguelen felt a sudden mingled

surge of joy and dismay. He hadn't known, then—not for certain—and the knowledge made him almost cry with relief. But against that, he would learn now.

He said firmly, "Yes."

"Lying," said Talbot slowly. He got to his feet.

"Giessman, you can sew him up now. I've got what I wanted. Let him out of the catatone and send him up to my office. He'll talk without prompting after this, I think."

His head felt peculiar now that he had sensation in the rest of his body. It was as if his scalp had been divided from him and was nothing but a numbness above his eyes.

The room was very different from what he had expected. But then everything about Talbot was different from what he had expected. Instead of a coldly functional office with microfile cabinets in all the corners and a telescreen on the desk going one way only, there was a quietly pleasant study draped with expensive tapestries. There was a desk, but it was an antique—a genuine Garsman, if Kerguelen was any judge—made of beautifully inlaid fiber sheets on a plastic frame. There was a soft blue carpet that reminded him of one in his own home. And there were even windows, facing east, through which a crimson dawn could be seen sprawling across the sky.

Kerguelen sat in his chair dreamily. There were two men standing behind

him, immobile, like stone, with their weapons drawn. He had noticed that the control on each was turned low so as not to damage the office if he tried to break for it.

But there was no point in that now.

Behind the dreamy facade, Kerguelen's mind was working busily on two levels, darting from one problem to the other like an insect between two equally attractive flowers. Though he knew that the other matter was more important, somehow he always kept coming back to the question of Talbot, and in irritation he concentrated on it to get it neatly disposed of.

A few minutes' consideration gave him a picture of the man that was fairly consistent—a slave to a cause in which he was too intelligent to believe completely, but in which he was absorbed because he knew of nothing better. A sensitive, proud man. A genius in his own way, one who had never known failure.

But not a success to himself—even though he had become to the citizens under him the living embodiment of a ruthless legend. A man with too great a mind to believe the arrogance he affected.

He came in when Kerguelen had been waiting five minutes. Kerguelen stood up for him of his own accord, because now that he could understand him a little he felt a genuine respect for him.

Talbot nodded and took his place behind the desk. He fitted, somehow.

One felt that the room was part of him. It crossed Kerguelen's mind that it very probably was—a living organism of the kind that had trapped him, but built for a different purpose, as a friend instead of an enemy.

Talbot looked up and said to the guards, "You may go." His voice was confident and casual. To Kerguelen's surprise, the two men behind him saluted and went out without a word. Talbot chuckled.

"Sit, down, Kerguelen," he invited. "You're surprised that they were willing to let me alone with someone who is as dangerous as you—a spy, who is not even a human being?"

Kerguelen nodded.

"They know that I am safe here," Talbot said. "This room and I are all one. You could not live for half a second if you tried to harm me. Though, as a matter of fact, you would not try. I know a little about you, Kerguelen. I think you understand a little about me, too."

Kerguelen inclined his head. Talbot pushed a box across the desk and said, "Do you use *chorda*?"

"I've never had any."

"It's a rich man's pleasure. I suppose you lived your part too thoroughly to try it. If you did, you missed one of life's great luxuries. Try one."

Warily Kerguelen looked in the engraved copper box and took one of the thin square rods it contained. It was strongly aromatic and awoke half-forgotten memories in his brain.

"Dip it in here," Talbot instructed, proffering a bowl of clear liquid. "Just the tip—that's it. Now smell it."

Kerguelen did as he was told. As he sniffed, a clear sweet perfume entered his lungs, Talbot, watching him, chuckled. "They're all different," he said. "I almost hate to offer one to anybody else for fear of missing the stick which is better than all the rest." He dipped one for himself.

Kerguelen, delighted, tried again. This time the scent was pungent, like spices in hot sunlight. Again, and it was clear and cold, like the smell of a frosty night, but there is no smell to a frosty night.

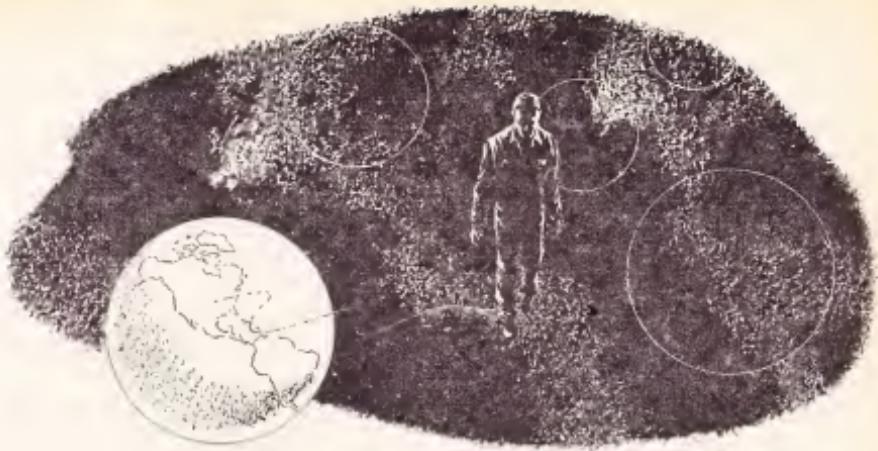
Quickly he held it out to Talbot, lest the scent should fade before he knew. "What is that?" he demanded.

"That is the scent of pines," said Talbot. "Rather, it was. There are no pines here, or indeed on any world except the one where I was born, but every smell in the universe is in one of these rods."

Kerguelen took it back. Now it was musky and rich, and he drew in the fragrance with real enjoyment.

"Music?" said Talbot, pressing a button on his desk. "I know this is something you like of ours. You weren't merely pretending to listen with pleasure."

There were soft trumpets in the room now, and voices joined them. It was the Dawn chorus from Valdona's Daytime suite. "It seems appropri-



ate," said Kerguelen.

"You bought a record of this quite recently, didn't you?" said Talbot.

Kerguelen nodded. The chorda was strong and heady, like fermenting wine.

"So, I found, did Noorden. You shared the same tastes to a great extent."

"I suppose we did," agreed Kerguelen. (Strong and earthy, like the smell of animals in a closed building).

"Which reminds me," said Talbot, his manner changing abruptly. "You are wondering why I have bothered to bring you here, why I haven't disposed of you as I did of Noorden. I'm going to try and explain, and you of all people might understand."

Kerguelen heard no falter in Talbot's voice when he said that he, an alien, was *people*, and he knew his task was going to be very hard.

"Tell me," said Talbot, "what do

you see me as? I want to know. I want to know what I seem to a man who can still see. The police, the surgeons who operated on you, my own wife and children—they are blended by what I seem to be. And what I seem to be is what you thought I was when you first guessed my name.

"They see me as a job. I have a job. I am custodian-in-chief of this planet. Personified as the position instead of the man, I have more power than the other citizens put together. But I am a human being!"

He stopped and laughed. The sound was short and rather bitter. He went on, "You must have a pretty poor idea of human beings, Kerguelen. It seems funny that you, an alien should be the only person to whom I dare talk freely."

"But why do you?" demanded Kerguelen.

"Because I have every excuse in the

world to kill you."

Kerguelen considered. He saw that it was so.

"How do you see me? Tell me. I want to know."

Kerguelen paused for a moment, the chorda held to his nose. (Fresh and salty, like ocean spray). For perhaps five seconds his mind went into high gear, and when those seconds were past he had some sort of a plan. It was not good; but then no plan conceived by him at this stage could be good. A wild factor had entered his calculations—the wild factor that sat behind the Garsman desk. But he thought he could even now steer things to the conclusion he had intended to aim for before.

He said, "You are a very intelligent man. You are serving a cause in which you do not believe because you can think of nothing better. And, because it is your nature, you do it very well indeed."

Talbot nodded slowly. His chorda was almost spent now, and he drew in a last breath of its fragrance before discarding it. "You have seen that I do not believe," he said. "You're right. I'm afraid of something I don't know, so I cling to what I do know because it works."

How tightly will you cling? The unspoken question filled Kerguelen's mind.

"What do you do here, Kerguelen?"

The Dawn chorus died into silence as the sun climbed up the sky, and

Talbot switched off the player.

"You need tell me nothing of those whom you have to help you do it. I know well that you and Noorden are only a single cell of the organization, but I want to know only what you are doing and to what end."

*You know nothing of the sort*, thought Kerguelen, watching the telltale contraction of Talbot's eyes with a wry satisfaction. *You only suspect, and the suspicion makes you afraid.*

"When I found Pietr Noorden I knew I was not dealing with an ordinary deviant. He came here as you came here, on an immigrant ship from one of the old worlds. You remember the records we made of your brain-pattern? It was a routine check. We have a copy of the brain-print of every person on the planet here—except mine. The lines your mind writes on the tape are more individual than handwriting or fingerprints, and they cannot be forged.

"But it is possible to tell from them who thinks too much."

*So that was what gave us away*, Kerguelen's mind ran on. *Such a simple thing, but we were caught off guard because we didn't expect to find initiative here when we hadn't found it anywhere else.* Brainchecks for immigrants were peculiar to this world, and maybe Talbot had even introduced the idea himself.

"I knew that you and Noorden could not be entirely human. You

think too much. Your brainwaves weren't consistent with your pretended behavior. And men do not pretend any more.

"So I had your houses made ready for you. We grow those houses, you know, and they're expensive, so you were honored. When I had enough data, I arrested Noorden and found out who he was, and because I was afraid I had him killed."

*You're working in the dark.* Kerguelen's silent comment was cynical. *You're guessing.*

"Then I checked to find out what he had been doing with his time. And the answer was nothing. Nothing! He had lived a man's life—a good worker, who liked to look at the stars sometimes and collected classical music with his surplus pay, but that, though eccentric, is not indictable.

"Yet he was an alien and a spy!

"I want to know, Kerguelen. Why are you here?"

Kerguelen wondered if Talbot really expected to be told. Perhaps he was scared enough to hope for a truthful reply. But he could not say, "Talbot, we're laying the groundwork for those who will come after—those who will take over your system and remake it from the ground up—as our kind have done on Aurora and Tierranueva and Plattner's World and half a dozen others. Humanity is in a blind alley, and it's gone too far, so to set it on the right road we've got to drag it back by the scruff of its neck."

He did not dare. *No man must know.*

Wherefore—

"We're looking at men," he said, "to find out what they're like. Bodily, we're identical, too alike for it to be entirely coincidence."

"But mentally!" interrupted Talbot fiercely. "Mentally! You're intelligent—a genius to the average man on this or any other world I know. So am I! But if I hadn't been an opportunist I'd have been a first-class criminal, and probably lobotomized for deviancy. But I saw there was a use for my talents in the police, and when I'd joined I came slowly to realize there is a purpose behind this system."

He snapped the shades across the windows and doused the lights. In the complete darkness he said, "Kerguelen, I'm going to show you something only a handful of men on this planet have ever seen. Do you recognize this?"

There was a pattern of lights on the wall opposite the desk now, and Kerguelen turned to look at it. He said, "No, I don't."

"It is the night sky of my own planet. The planet from which men came. And there"—two dozen stars became ringed in red—"are some of the stars where men have colonies. The average distance between those stars is fifteen parsecs. The most distant colony is a hundred and two parsecs from Earth—my home. From side to side the sphere of colonized stars is a hundred and sixty parsecs across.

"There are so many men it would take an hour to write the number down on paper.

"And all those men are governed from Earth. Earth is a collecting store of information, a coördinator. Earth is government. But even a whole planet cannot govern so many people if they are irrational and anarchistic."

The patch of stars was slowly changing—revolving—and with each few degrees of turn came fresh red rings to shine on the wall. Kerguelen felt a kind of awe and also a kind of horror at the sight, as he realized for the first time the true magnitude of the task his kind had undertaken.

He said, "And in the name of government you stopped the growth of the human mind—you stifled thought? You turned men into hive-minded insects?"

Talbot sounded bitter in the darkness. "What else was there to do?"

Then there was a noise as though he had sat up sharply, and the shades went up and the lights came on.

"What else was there to do?" he repeated fiercely. "You know! You did it! You're a man, you belong to another race that has the stars! How do you rule chaos?"

There was a prayer in Kerguelen's mind as he prepared to answer. On this next two or three minutes depended perhaps the fate of a race—the right of Earthborn man to be helped out of its blind alley.

He said quietly, "We have no government."

Shocked incredulity. Good.

"But how can you exist without one?"

"Why should we not? What does your central control do?"

"It stopped wars. It stopped plague and famine and fear."

"It stopped humanity," said Kerguelen flatly. "We, too, once had wars and the other things you name. Now we have none, yet we have more planets and many more people than you. You created a State and made it your father and mother, your schoolteacher and even your lover. You grew so dependent on it that now you are afraid of what might happen without it. In fact, you have made everybody so scared that if you did do away with it everything you fear would probably happen because people felt it was expected of them."

There was pity in his mind, but his voice bore a knife-edge of contempt. It had to. He had to try and make Talbot cling to what he knew.

"You must despise us," said Talbot quietly.

*Despise you?* cried Kerguelen in his mind. *No! Pity you, yes, when we see how closely we avoided making the same mistake, but despise you—never!*

But he maintained a stony silence that Talbot should have taken for an affirmative Kerguelen was too kind to utter.

Every fiber of him ached to tell this

man. Let me ask his help that he and his kind may be helped; and for a moment he wavered, before reason prevailed. Men must not know, for men must be proud of themselves or they will become parasites. Men must be brought out of their blind alley, but they must not be told that they are led, for if men know they are pitied they will pity themselves. Men must not know that their father-mother State is being destroyed, or they will fight to hold on to it in fear of all that they believe would happen without it.

As it was, they should never have trapped Noorden and himself. It was a major error, and only careful action could retrieve the blunder before it became disastrous. It would never happen again.

Talbot said slowly, "Yes, you have every reason to despise us. I have no right to feel resentment for that."

Sickly, Kerguelen thought, *I've failed, I've failed. I wanted to make him rise up in defense of what he knew, and force him to a point where he could no longer think and act for himself. For a man who is thinking for himself cannot be guided as we have guided so many.* He said with an effort, "I don't understand."

"I mean I'm going to let you go."

*But you can't, thought Kerguelen frantically. You mustn't. You may wreck everything!*

Aloud, he said, "How can you do that?"

"The great Talbot can make a mis-

take after all," was the reply. "Why not? Only four or five people know you are not human. I can dispose of them quite easily. I have some small power here, remember."

"But—why?" Kerguelen asked, playing for time while he tried to force his mind to accept the fact that he had failed.

"Because you can help us," said Talbot emphatically. "And never before have we been so much in need of help. We're dying mentally. We're suffocating. I knew that before I met you or Noorden, but I accepted it because I knew of nothing else. Your people have something better. Maybe we can't do anything with the whole of humanity, but with these here, with your help—"

"How do I know this isn't a trap—so that I'll lead you to the others?" said Kerguelen. He did know; he would have trusted him and knew he meant what he said—but that was the point, for even Talbot could never be expected to understand the way Kerguelen's people were working to help mankind. Not even Talbot would willingly bargain for the slow regression almost to primitivism that might ultimately be necessary.

If only Talbot hadn't been so different from the other custodians-in-chief they had met, and even from the description he had built up from rumors.

Perhaps there was one way out, even now. Talbot wasn't sufficiently afraid of aliens. If he had been, he

would have gone ahead as he had with Noorden, and the police would have continued to look for the men who thought too much, while the aliens that mattered could go ahead remaking the race of man in a way that would bear fruit. One slender chance remained to restore Talbot's fear.

He said, aware that the other had stopped speaking, "I don't believe you!"

In the same instant he had seized the heavy copper box of chordas from the desk and made to smash it into Talbot's face. Blackness rushed upon him from all sides.

The room that was a part of Talbot

had saved perhaps not only Talbot but the whole race that had been born on Earth. It was only a very lowly part of the custodian-in-chief; it was his instinctive defense reaction, older than man, as old as life maybe, and it was going to kill Kerguelen as it had killed other things before.

It was a pity, he thought in the darkness, that the only man who *might* have understood could not possibly be allowed to understand. But the plan was too far gone to brook interference—even if it were in the guise of assistance—from any human at all.

THE END

## IN TIMES TO COME

Come the next, the February issue, H. Beam Piper will be back with the first of his Paratime stories in quite some while. To make up for the long absence—this one is the first two-part serial; "Time Crime" is the title. (What else, with the Paratime Police as the central factor?)

The police usually have a little difficulty locating a criminal when he's one individual among fifty million or so. But taking Piper's assumption of the parallel time-tracks, each branching from a decision-point of past history, and giving the police system a real headache—how do you find a criminal who's happily lost himself among all possible people of all possible cultures of all paratime?

And it's a little rugged searching through cultures that consider sudden murder the most convenient way of not being bothered by strangers.

Kelly Freas, by the way, has a lovely cover of one of those gentle characters. He looks right cute in his sunbonnet!

THE EDITOR.



# FIELD EXPEDIENT

BY CHAD OLIVER

*The Old Man had money; he had political power. He also had ideas of his own — and a whim of steel. But what that whim was, and why those ideas . . . that was hard to find out!*

Illustrated by Freas

## I.

The cold wind swept in from the gray Pacific, drenching Los Angeles under sheets of driving rain. Keith Ortega, pushing his way through the uneasy puddles of Wilshire Walk, be-

gan to regret leaving his copter at the Center. He was dry enough in his rain-bender, but the air coming in from underneath the force lines was tasting decidedly stale.

The broad walkway was deserted around him, although he could see a

few lights spilling out wetly from store windows. A violet government airsign hung in the rain, glowing gently just above his head: DON'T ROCK THE BOAT.

He turned left at the empty Santa Monica cross and two blocks later he reached the Vandervort Tower. A flashing orange neon sign above the ornate street doorway said: WE WANT YOUR BABY.

Keith Ortega stepped through the door and hurriedly shut off his rain-bender. He took a deep breath of relatively fresh air and felt much better. There was no one in the street lobby; he had already guessed that business would be slow this afternoon. He went across to the elevator, his feet light and awkward without the rain-benders on his shoes, and went up to the tenth-floor interview room. Surprisingly, it was in use.

Ellen Linford, who looked like the epitome of American motherhood, had another young couple on the hook. She was bouncing a baby on her knee and smiling, and even Keith's knowledge that Ellen detested babies failed to spoil the warmth of the scene. Ellen was a good actress. She had to be.

Keith assumed what he trusted was a kind and paternal expression and sat down next to Ellen. "Good afternoon, Mrs. Linford," he said. He beamed at the baby and chuckled it under its chin. "What have we here? How are you, little fellow?"

"It's a girl," Ellen corrected him.

She turned to the nervous couple before her. "Well, aren't we in luck! This is Mr. Ortega *personally*."

*Brother*, thought Keith.

The couple brightened, confronted with Fame in the flesh.

"I'd like to have you meet Mr. and Mrs. Sturtevant," Ellen said. "They've decided to leave their little Hazel to the Foundation. Isn't that nice?"

"Wonderful," Keith Ortega agreed heartily. He shook hands with the parents. "You've made a very wise decision."

They hesitated. Then the woman blurted out the inevitable question. "I still don't understand all the conditions, sir," she said in a too-high voice. "Why couldn't we see Hazel, just once in a while? I mean . . . we wouldn't want to rock the boat or anything . . . but just to make sure she's all right—"

"I've been trying to explain," Ellen began.

"Well now, Mrs. Sturtevant," Ortega cut in, "please let me assure you that we are in complete sympathy with your request. Your reaction is perfectly normal for an American mother, and we're glad that you are concerned about your child. Unfortunately, it just would not be wise for you to see Hazel again, even for a little while."

Mrs. Sturtevant looked at her husband for support, didn't get any, and faltered ahead on her own. "But why?"

Keith frowned and made precise

pyramids with his hands. "Facts are facts, my dear," he said slowly. "If you wish to keep Hazel, that is certainly your privilege. You have come to the Foundation of your own free will, and you surely have investigated us enough to learn that we are an absolutely reliable concern. We believe that children entrusted to our care are entitled to a life of their own, and we have found that repeated contacts with the original parents just make it tough on the child. Now then, you want Hazel to lead a full, normal, happy life, don't you?"

"Of course we do," the husband said. Plainly, *he* didn't care what happened to little Hazel.

Keith smiled. "Then you must trust us," he said. "You can't have it both ways. I give you my personal word that Hazel will be in good hands with the Foundation. If you have any doubts, I suggest that you go back home with your child and talk it over some more. The decision is yours to make."

The parents held a whispered consultation. Mrs. Sturtevant finally whispered, "We'll leave Hazel with you."

"Splendid!" Ortega said. He shook hands again. "You just sign the papers with Mrs. Linford, and that's all there is to it. I'll look in on Hazel from time to time myself, so please don't worry about her." He looked at his watch, although he knew perfectly well what time it was. "I'm afraid I must be

going. Good luck to you!"

He hurried out of the interview room to the elevator, leaving Ellen to finish things up. He couldn't take the last farewells to the child; they gave him the creeps. If the parents loved their children so much, why did they give them to the Foundation?

The elevator whisked him up to the fifteenth floor.

Outside, the cold rain dropped from the sky and ran in rivers down the sides of the Vandervort Tower.

Keith Ortega checked in at his office, a pleasant sanctum lined with shelves of books and a clinging memory of blue tobacco smoke, and the first thing he saw was the red light blinking over the tri-di.

Someone had called. Since his private number was not generally known, the caller had probably been either Carrie or Old Man Vandervort himself. He dropped into the comfortable chair behind his desk and punched the button.

It was Old Man Vandervort. His lined face filled the screen, the snow-white beard bobbing up and down to punctuate his sentences. "Hello, Ortega," he said. "Out again, I see. If you should by chance show up in your office today, I want you to come out and see me personally before you go home. Something important has come up. That's all." The screen faded.

"Damnation," Ortega said aloud. "The master's voice."

Well, there was no getting out of it. He would have to go hold hands with the old joker, even though he knew that the "something important" was probably nothing more than Vandervort's wanting someone to talk to. This made the second time this week, but then Vandervort was paying the bills.

He caught the elevator up to the main entrance at the thirtieth floor copter field and signed himself out in a Foundation copter. It was still raining hard enough to discourage traffic, but the wind conditions were not really prohibitive.

He lifted the copter up to the five-thousand-foot lane and gunned her north at a modest two hundred per. He kept slightly inland from the coastline, and set his pilot to hold him well below the overland freight routes. There was very little traffic, since the subs were holding back from the unloading chutes until the weather calmed down a bit.

In fifteen minutes, the copter veered off to the right and buzzed up Vandervort's Canyon. He was challenged four times by the Old Man's watchdog scanners, but managed to convince them that he was who he said he was. He made a wet, slippery landing on the patio field of the huge estate, activated his rain-bender, presented his credentials to a guard who should have known him by sight, and finally got inside the visitor's wing.

One of the butlers bowed, smiled,

and said, "Right this way, Dr. Ortega. Mr. Vandervort is expecting you."

"So I heard," Ortega said.

He followed the anachronism through the familiar labyrinth of richly-carpeted hallways, his senses overwhelmed as usual by the sheer *richness* of the Old Man's castle. It wasn't really that the place was in bad taste, but simply that there was so confounded *much* of it.

The procession of two moved sedately through the visitor's wing and on into the private quarters, which were a trifle more elaborate, if possible. It marched up the marble stairs to the second floor, down the interminable gray passage, and finally came to a well-oiled halt before a fantastic mahogany door.

*Congratulations, thought Ortega. You have circled the globe on roller-skates.*

The butler knocked discreetly on the mahogany slab. A tiny green light blinked on in the center of the door.

"You may go in now, sir," said the butler, and bowed.

Ortega resisted the impulse to bow back and stepped through the opening door. He was just in time to catch a glimpse of an exceedingly sensuous young woman making her swishing exit by means of another door.

"Ah there, Ortega!" boomed Old Man Vandervort, straightening up in his chair. "What kept you?"

The room, like everything else in the mansion, was big. It had a wall-to-

wall brown rug that must have cost a fortune, and it was literally stuffed with tables, chairs, desks, fireplaces, books, paintings, tapes, flowers, gew-gaws, drapes, and nameless shapes and sounds. As always, it was much too hot, like a greenhouse on a humid day.

James Murray Vandervort was a small man, but he looked like what he was: the richest human being on Earth. He was dressed in a dark-green lounging robe. His face was red from too much brandy and his trim white beard was slightly askew. He was one hundred and five years old and he had a bad heart.

Ortega said, "I was delayed by a typhoon. Sorry."

Vandervort laughed rather gaspingly and his face got still redder. "Well, well," he said, "never mind about that. Have a brandy." His voice was surprisingly loud, as though he were constantly shouting over great distances.

Ortega accepted the brandy, personally poured by the Old Man, and wiped his already moist forehead. He figured that the room temperature must be close to ninety, and he also figured that he was in for at least an hour of it.

The Old Man began, as was his custom, by energetically beating around some bushes. "How's business?" he asked. "How many have we got for this load?"

Ortega sank into a huge, soft chair that reduced his six feet of height to

approximately pygmy stature. "It's been a little slow today, Van. But we've got sixty-five so far. All healthy and yelling their heads off."

"Um-m-m. And the breakdown?"

"Thirty-four set for the Foundation. The rest are already on the ship."

"Good. Splendid. Any problems?"

"None to speak of. I'm still worried about parking that ship out in Arizona. If the government should stumble onto that crate—"

Vandervort laughed his alarming laugh and clapped his thin hands together. "The *government!* How many times must I tell you, Keith—I'll handle the government. Or anybody else, for that matter. More brandy?"

Ortega could have struggled along without the brandy in the jungle heat, but he accepted another glass. It was part of the ritual. You simply had to wait the Old Man out. If he had something important to say, he would say it eventually. If not—well, Van was powerful enough to indulge in his whims.

"I'm a big man, Keith," Vandervort said, his pale blue eyes darting around the room.

"I'm aware of that."

"I can buy and sell the government, and make money on the deal. I've got the best experts in the world faking those records at the Foundation. Half the babies stay here on Earth, and that's enough to cover our tracks. I'm not worried about the government."

"So you keep saying. But *I'm* worried, just the same."

Vandervort talked for twenty minutes on how unworried he was by the world government. He pointed out again and again how careful they had been, how many senators he owned, and how what they were doing was not illegal—only extralegal. Finally, after Keith Ortega estimated that he had dropped about five pounds sitting in the sweat bath with the Old Man, he edged in again toward the subject.

"How about our colonies?" Vandervort demanded, sipping his brandy. "How about the robots?"

Keith shrugged. "O.K. as far as I know," he said. "You know as much about it as I do. It's still too early to get definite results. Culture A is only six years old, after all, and that's the oldest one we've got."

Vandervort drummed his fingers on the arm of his chair. "In other words," he said, "you don't know."

Keith raised his eyebrows. "Van, we're getting reports every week, and we've got twenty men and women up there—"

"But *you* don't know. And you're the one who *has* to know." The Old Man got to his feet with an effort and paced the floor. The slippers on his feet *pad-padded* as he walked. His eyes began to gleam with the strange fanaticism that Keith had never understood. He stopped and jabbed a finger at Ortega. "Can't you see that,

Keith? Can't you?"

Keith knew what Vandervort was talking about. He felt a vague unease stirring within him. "Spell it out, Van," he said.

Vandervort walked over and stood right in front of him, breathing hard. A too-prominent vein pulsed in his neck. The heat was stifling. "All right, Keith, I'll be more explicit. We've been working together for ten years, ever since I yanked you off your soapbox and put you back on the job. It was understood when you set up the colonies that you were to go out there yourself and supervise the project. I think it's time you went, and I think you ought to stay at least a year. How about it?"

"There's no need—"

"I think there *is* a need. Nothing must go wrong out there, do you hear? Nothing! You've master-minded enough from this end. I think you and Caroline should go out with the next shipload—and I'd hate to make that an order, Keith."

Keith smiled. "Sit down, Van. You'll pop an artery. And don't threaten me, please. I'm not your slave."

The Old Man frowned, considered, and sat down again. A faintly baffled expression crossed his face. "I should think you would *want* to go, Keith."

"I'll think it over."

"All right. Sorry. It's just . . . well, never mind. You can go, Keith."

"Thanks. I'll call you."

He left the room, anxious to get out of the heat, and saw the quite amazing girl come back in before he got out the door. The butler was waiting for him, and escorted him back to the patio field.

It was night, and still raining. He lifted the copter out of the canyon and flew southeast toward his home on the desert. Far below him, almost hidden in a mask of rain, the lights of Los Angeles glittered like multi-colored diamonds embedded in black sand.

A government airsign loomed up like a pale violet ghost ahead of him: DON'T ROCK THE BOAT. Keith flew through it and it reformed itself behind him, patiently.

Carrie would be waiting.

Keith looked up, into the darkness and the rain. Venus was invisible, and a long, long way from home.

## II.

They had real steak for supper that night, which was excellent, and when they were done they retired to the annex. They hardly ever sat in the glass-and-steel living room, unless they were entertaining guests, since both of them found it impossible to relax there. The annex was primarily a cozy room stuffed off in a wing—an artless conglomeration of books, tapes, half-finished paintings, old-fashioned furniture, and one small bar.

Mostly, they lived in the annex.

Carrie slipped a battered smock

over her head and began to poke at her current artistic effort, an oil painting of a cactus in the desert sun. The subject, Keith thought, was none too original. He sprawled on a couch and pretended to read, watching his wife.

She was a tiny blonde, barely five foot two, with a doll-like face that invariably earned her the designation of "cute," an adjective she cordially detested. Ortega had married her twenty years ago, when she was twenty-five, and they were still comfortably in love with each other. They had had a good life together, and Keith found it hard to put his finger on just what had been lacking in it.

Perhaps he was at fault. He was a big man, and she had tended to walk in his shadow, both mentally and physically. Twenty years ago, he had been a leading socioculturist for the world federation, but he had become bored with the exactness and easy predictions and trivial problems. He had quit his job and gone around the world in an astonishing sailboat, looking for something he couldn't find. Carrie had adjusted without complaint. He had formulated his Dark Age thesis that had given him fame of a sort, and had lectured and written about his culture until he discovered that no one was taking him very seriously. He had drifted into an easy sarcasm that reflected an inner unease that he could not quite understand, and even the excitement of the Vandervort project had failed to satisfy



him. He was not, he knew, the easiest man in the universe to live with.

It would have been inaccurate to call Carrie depressed, but on the other hand he would have hesitated to say that she was happy. *Restless*. That was the word. She shifted from painting to writing, cheerfully admitting that she wasn't much good at either, and from night-life in Los Angeles to long morning horseback rides across the desert. She seldom complained, and she never interfered. She seemed, somehow, to be waiting, always waiting, without knowing just what it was that she waited for.

They had both wanted children, but the children hadn't come. They had toyed with the idea of adoption,

but had never taken any concrete steps in that direction.

"I saw Van today, Carrie," he said finally, lowering his book.

"Oh?" She added a dab of yellow to the brown of the sand. "Is he still alive?"

"He'll go on forever. I wish I knew what he was after."

Carrie squinted at the painting. "Well, we don't know, and that's that."

"It's a funny deal, Carrie. I've set this whole thing up with his money and his determination. I've spent ten years of my life on it, and I *still* don't know why he's doing it."

"You could always quit, Keith. We could haul the old sailboat out again."

"No, baby. I can't quit this time." He hesitated. "Carrie, Van wants us to go to Venus for a year to get the feel of what's going on there."

Carrie put down her brush and turned around, eyebrows arched. "You mean, in *person*?"

"In person. To Venus."

"What else happened today—war with Sweden?"

"This is on the level, sugar. He wants us to go."

Carrie came over and perched on the edge of the couch, almost birdlike in her smallness. She kissed him, pleasantly. She lit a cigarette and looked around her at the books and paintings and friendly walls. "When do we leave, hon?"

"Do you *want* to go? You know what Venus would be like. It's a long way from everybody and everything—"

"I think it might do us good, Keith," she said slowly. She ran her slim fingers through her pale blond hair. "I'd like to go."

"You'd have to go to school for a while, baby."

"I'm willing." Her blue eyes suddenly glowed with an unexpected, surprised hope. "Keith, you know what you were always saying about this Dark Age of ours? Well, I've often thought . . . I mean—"

He looked at his wife and smiled. "You've thought that *we're* caught in our culture, too," he said. "We're stale. I've thought the same thing. But somehow we just drift on—it isn't

easy to break away."

"We *can*, Keith. I know we can."

She wanted this. She wanted it desperately. Keith himself wasn't sure, but he kept his indecision well disguised. He kissed his wife.

"We'll see, baby," he said. "We'll see."

The next few months went by in a hurry.

Carrie was busy being indoctrinated into the Halaja culture pattern, but Keith Ortega had too much time on his hands. After he had thought himself into the same hole about one hundred times too often, he went back to see Vandervort.

The Old Man, looking like a flushed, bearded gnome preserved for eternity in a stifling burial vault, seemed glad to see him, but slightly apprehensive. He was worried again, fretting over details. "To what do I owe the honor of this voluntary visit, Keith?" he boomed in his too-loud voice, pouring out a glass of exquisite but unwelcome brandy. "You haven't changed your mind?"

"No, Van. We're still going."

"Good. Splendid!" The pale blue eyes in the red face darted nervously around the enormous room, lighting here on a vase, there on an ancient statuette, somewhere else on a rosy fireplace. Despite the terrific heat, his skin was dry and Keith knew that it was cool to the touch. The loud voice tried to fill up the room. "Well? Any-

thing wrong?"

That was unusual directness for Vandervort, who was usually more subtle than he appeared. Keith took advantage of it. "Nothing's wrong, Van, except with me."

"Oh?" The Old Man hauled himself to his feet, heedless of his doctor's instructions, popped a pill into his mouth, and washed it down with brandy. He *pad-padded* across the rich brown rug. The vein pulsed in his neck, feeding his brain with blood. "Well, well? Scared? Worried?"

Keith took out his pipe, filled it, and lit it. The blue smoke curled up through the damp heat and filmed across the ceiling. "I'm worried about *you*," he said.

"Ah," said Vandervort, sinking into his chair again and pouring more brandy. "You fear I may die and leave you in an . . . um-m-m . . . uncomfortable position? Is that it?"

"No. It's your motive I'm worried about, Van."

Vandervort narrowed his eyes to slits. "That doesn't concern you, Keith."

"I think I'm entitled to know."

The Old Man seemed to shrink in his chair, looking smaller than ever. His white beard quivered slightly. Almost, he looked—what was the word? Afraid? What could James Murray Vandervort be afraid of? "Your salary has been good," he said, his voice not quite so loud as before.

"I had money before I knew you.

The money is secondary."

The pale blue eyes opened. "Why did *you* take the job, Keith?"

Keith Ortega hesitated. Well, why had he? Or did he know, really? "The ideas were mine," he said, feeling for words. "I thought it would be interesting. I guess I was bored." He smiled. "Maybe I *wanted* to rock the boat a little." The words did not satisfy him.

"Good. Splendid. Has it ever occurred to you that maybe I just might want to see what would happen? Maybe *I'm* bored. Give a man a few billion dollars and he's still a man, Keith."

"I'm not questioning your humanity." Keith puffed slowly on his pipe. "But I can't buy that story about your just being curious. I've watched you too closely, Van. This is more important to you than life itself. Why, Van, *why*?"

Vandervort looked away, into the filled emptiness of the great room, and said nothing.

Keith Ortega watched him closely. The Old Man was one hundred and five years old. Like Keith, he had no children. He had poured a billion dollars into the secret Venus project, and he had turned into a fanatic. What was he after on Venus?

Keith knew the old boy fairly well. He was certainly not just a humanitarian idealist; he cared very little about the human animal one way or the other. He wasn't after commercial gain—after so many years, business

bored him, and at best he regarded it as a means to an end. He was most emphatically not a dreamer.

"Maybe," Keith said finally, to break the long silence, "you want to kick man upstairs to the stars. Maybe you believe in destiny."

The Old Man laughed his booming laugh, his red face flushing with the strain. "Maybe I do, Keith," he chuckled. "Maybe I do."

There was more talk, but it was singularly unproductive. Early in the morning, without finding what he had come for, Keith said good night and left. The Old Man stayed in his chair in the too-hot room, smiling a little, his eyes nervously peering into the shadows, sipping his brandy.

Keith lifted his copter and flew toward home, with the lights of Los Angeles below him and a full moon above him. The night wind, deflected by the vents, was fresh and cold in his face. High over his head, the freight lanes were shadowed with ships.

The violet sign floated in the air: DON'T ROCK THE BOAT.

All the way home he thought of Old Man Vandervort, sitting alone in his castle, and the simple question whispered through his mind:

Why?

Some questions, fortunately, were easier to answer.

Keith Ortega had answered some of them to his own satisfaction a long time ago. He had written a book, with

the somewhat melodramatic title of *The New Age of Darkness*, and the book in a sense had led Vandervort to the idea of the Venus project. The book had been widely read, and was generally regarded as possibly correct and certainly amusing.

No one took the book very seriously—which tended to confirm its thesis. No one but Vandervort.

What was the book about?

It was about the planet Earth.

The story of Earth was a familiar one. After a million years or so of bashing in each other's brains with bigger and better weapons, the human animal had finally achieved a fairly uniform, stable, planet-wide civilization. He had done it out of sheer necessity, just a cat's whisker this side of nuclear extinction, but he had done it.

By the year 2050, the dream of One World was no longer a dream.

The human animal was living on it.

In his understandable haste, however, he had overlooked a few basic points.

One civilization had taken over from many diverse civilizations. Given the facts of history, it could not have been otherwise. An essentially Western culture, due to a running headstart in technology, had spread itself thickly around the globe. It had taken root and prospered wherever it had touched. It had swallowed and digested every other way of life on the planet Earth.

There was One World, and there was peace.

A standardized, uniform, flourishing, world-wide civilization.

The human animal began to breathe more easily.

There was a joker in the deck, even though his laugh was a long time in coming. One World meant one culture pattern. There had been no orchestration of differences, but simply an almost complete *obliteration* of differences. When man was in a hurry, he took the quickest available short-cuts.

It was a good culture pattern, by and large, and the human animal was better off than he had ever been before. It was a lifeway of plenty, a culture of unlimited technological resources, a philosophy founded on the dignity of man. Earth became a paradise—literally, there was a paradise on Earth. The jungles and the deserts and the arctic wastes, when they were needed, were converted into rich, green land. The power of the sun was harnessed, and harnessed cheaply. Vandervort Enterprises made a thousand fortunes from solar power, but they delivered the goods.

The culture flowered.

The worlds of the solar system were briefly explored, written up, and ignored. Both Mars and Venus, contrary to early semi-scientific guesses, were found to be habitable. Habitable, but not very palatable. Mars was an almost waterless desert, and Venus a strange jungle world that never saw the sun. With the untapped resources of Earth ready and waiting in the

back yard, the other planets were not worth colonizing.

One thing about Paradise: nobody wanted to leave it.

The human animal stayed home in droves.

He had a good thing on Earth. It was up to him to appreciate it, to protect it, to cherish it. The new golden rule was: DON'T ROCK THE BOAT.

The uniform culture pattern, the framework for human existence, filled out. Every culture has a potential beyond which it cannot go. Every culture has a stopping point. It can achieve its values, attain its goals, follow every path that is open to it. When that happens, whether in Greece or Rome or Stone-Age Australia, the culture exhausts itself and begins merely to repeat what it has already done. Throughout history when a civilization reached its climax and leveled off, there was a new, fresh, vital culture somewhere else to take up the slack and go off in a new direction, jolting the old civilization out of its rut.

This time there were no rival cultures.

There was nothing to take over.

By the year 2100, the civilization of Earth had shot its ammunition. It was a perfect, static, frozen Western culture. It began to repeat itself over and over, endlessly. It went nowhere, and took its own sweet time doing it.

It was not decadent. It did not retrogress. It did not really deterio-

rate. It simply jogged along its well-worn circular cinder track, not working up a sweat, mildly pleased with itself.

Most people did not know what had happened, of course. How could they? Did the citizens of the Dark Ages know that the ages were dark? More significantly, did they give a damn?

People were as happy as they had ever been, after a fashion. They were well-fed. They were comfortable. There was no atomic horror staring them in the face. Kids still fell in love, and spring still came around every year.

Go up to the man in the copter. Tell him that his culture has run out of gas.

So what? DON'T ROCK THE BOAT.

Still, there were signs. Ignorance always carries a price tag.

The loss of cultural vitality made itself manifest—very slowly, the birth rate began to fall. The number of suicides, even in paradise, began to go up. People killed themselves for reasons that bordered on the whimsical. Parents who had children often did not want them. The number of illegitimate children, despite the lowered birthrate, went up.

The culture was *aimless*.

The word wasn't decay.

It was boredom.

These were the facts, as Keith Ortega had worked them out. These were the facts that Vandervort had to

deal with. These were the facts that added up to Venus.

At five o'clock in the morning on the first day of September in the year 2150, Keith Ortega and his wife boarded the Foundation ship hidden under an unclaimed area of the Arizona desert.

In addition to Keith and Carrie, the ship carried two pilots, a navigator, a doctor, fifty babies, twenty-five special humanoid robots, computers, and supplies.

Keith and Carrie sat in their cabin. There was nothing to see—no windows, no viewscreens, no control panels, no flashing lights. There was nothing to do. Neither of them had ever taken off in a spaceship before. They waited.

A low whine whistled through the ship, and steadied into a low, powerful throbbing. The beat of the air-conditioner picked up. An electronic relay *thunked* heavily into position.

"Come on, come on," Keith whistled.

The lights dimmed. A muffled, coughing roar cut loose from somewhere far away. There was a quick giddiness, a sudden second when the heart skipped a beat. Then the lights brightened again, the sound steadied, and the ship's gentle gravity field took hold.

The ship went up.

Up, up through the pale sunlight of early morning. Up through the still,

soundless sea that never knew morning or night, laughter or tears.

Earth was gone.

Keith smiled at his wife and wondered how long it would be before either of them saw a blue sky again.

### III.

Venus.

Keith had a mental picture of it, and had even seen photographs and scientific reports brought back by the early expeditions. He thought he knew what he was getting into.

The reality, of course, was different.

When they stepped down from the ship at the receiving station, twenty-five million miles from Earth, his first surprised impression was one of *sameness*.

Even scientific accounts tended to emphasize the unusual and the unique. Reading old accounts of the Sahara or the Amazon Basin, it was possible to forget that those places were on the same Earth with Los Angeles or London or New Delhi—possible even to get the impression that the inhabitants weren't really human beings at all.

More than anything else, the receiving station area of Venus looked like an obscure corner of Earth on a mildly unusual day. It was very cloudy, which was to be expected, and the air was like thick gray fog. It was warm and damp, and the atmosphere tasted artificially sweet and heady. Gray-green vegetation circled the sta-

tion like a choking wall, and the hush in the air was a thick and heavy oil.

But the really *alien* aspects of Venus—the diffuse colonies of oxygen-breathing organisms that webbed the higher clouds, the strange temperature currents that precipitated the water vapor before it could rise to the four-mile carbon dioxide bands—were invisible.

While the doctor and the perfectly humanoid robots unloaded the babies, Keith and Carrie started across to the dome-shaped station house. Mark Kamoto spotted them before they had taken ten steps. He ran up to them, waving and hollering.

"Hey!" he yelled. "Welcome to the Underwater Kingdom!"

Four hours and two pots of coffee later, they were still talking full blast, in that inevitable outburst of verbiage which occurs whenever long-separated friends are reunited.

Keith grinned at Mark, who looked thinner and tougher than when he had left Earth three years before. "We'd like to get out and look at it," he said finally.

"We've got some work to do first," Mark said, "so I think we'd better wait until tomorrow. That'll be about eleven Earth-days yet."

"Don't play pioneer and greenhorn with us, old boy," Keith said. "We know how long the night is."

"That's what you think," Mark told him. "You know it on a clock; wait till you live it!"

By the time the night had come and gone and the gray light of day had rolled around again, Keith was ready to admit that Mark had been right. The ten Earth-days of the Venusian night had been busy and full, and spiced with the exoticism of the truly *new*.

Still, they were long, long days.

It rained a good fifty per cent of the time—a hard, steady, monotonous rain that drummed into the jungle with unholy steadiness. The clouds glowed with a pale phosphorescence. To a man born and raised on Earth, the effect was disconcerting. It was as if you somehow slept through every day, and whenever you woke up it was always a cloudlighted midnight, and whenever you went to bed it was midnight still.

With Mark piloting the copter, they took off into the morning fog and soon left the station clearing far behind them. Four babies, comprising the quota for Halaja, shared the back of the cabin.

One of them, a solemn-eyed child with long curls and a pug nose, would be Keith's son until he returned to Earth.

"Look at the birds," Carrie said.

There were thousands of them, as large as hawks and brilliantly colored. They swarmed above the gray-green jungles in plumed squadrons, slanting down occasionally to snare tiny lizard-like reptiles that lived on the broad leaves at the top of the forest. More

than anything else, they resembled the aquatic birds over the seas of Earth, diving after fish.

The copter flew due west, in a lane between the swollen mountains of the clouds and the rolling roof of the jungle. Once they passed an open plain, crisscrossed with small streams and dotted with grazing animals. There were many swamps and bogs, but few hills.

"Hang on," Mark said.

Venus promptly exhibited her favorite stunt: raining. It got just a trifle darker, and then the sponges of gray clouds began to drip. The copter cut wetly through the downpour, wobbling slightly when it ran into semi-rivers in the sky. There were no high winds, however. There was no lightning and no thunder.

In eight hours they reached Halaja.

From the air, half hidden through a drizzle of rain, the village of Halaja looked like a faded photograph of an ancient frontier fort on Earth. It had no wall around it, but the wooden houses were built in a square around a central plaza, and were interconnected by covered plank passageways. In the center of the plaza was a circular pool, and around the pool was a ring of fire-pits for cooking. For perhaps two miles in three directions around the village the jungle had been cut back and the land was planted with Sirau-fruit. To the west, there was an open field, and beyond that was the Smoke River, its slow blue water winding lazily

through the dense gray-green of the jungle. Several moving figures were visible in the plaza, looking like tiny black ants from the copter's altitude.

Halaja. A place where people lived. Keith took Carrie's hand.

Mark set the copter down in the damp athletic field to the west of the village.

Side by side, the three of them walked across the field and along a wet path through a patch of Sirau-fruit. Keith carried a baby uncomfortably in his arms while Mark, as an old hand, hauled two of them. Carrie took the small gentleman with the pug nose. The spray of thin raindrops in the air cooled their faces and dripped down the backs of their necks.

"Hey!" came a shout from the village. "Company!"

A cluster of adults came running out to greet them. They were simply dressed in shirts and shorts, with their feet bare. Most of the kids were too young to walk, but two of them toddled out as far as the gate and stared wide-eyed at the procession.

"Looks like old-home week," Keith grinned.

"You won't get many visitors in Halaja," Mark said.

The villagers swarmed around them, all talking at once. They pounded Keith on the back and gravely shook Carrie's hand. The babies were taken away from them, much to Keith's relief, and there was much clucking and laughing and general baby-talk.

Bill and Ruth Knudsen were the only human couple in the village, but if Keith had not known them previously he could never have picked them out. The robot humanoids were virtually perfect imitations.

"Keith!" boomed Bill Knudsen, a big blond in need of a shave. "It's good to see you!"

Ruth, beaming from ear to ear, said: "So glad you decided to come. We've fixed up a room we know you'll like." The delight in her eyes spoke eloquently of her loneliness for another human woman.

They all surged into the village with a whoop and a holler.

Six hours later, Mark took the copter and left.

Their life in Halaja had begun.

It was surprisingly easy to adjust to the life of the village. Different as it was from the life they had known on Earth, they had been trained in its ways and fitted smoothly into its routine. The Sirau-fruit did not require an inordinate amount of time, and the free hours were filled with games and rituals and the telling of sacred stories—most of which Keith had written himself.

Ceremonialism, in a very real sense, was Halaja's business.

Carrie had named their adopted son Bobby. After two Earth-months in the village, Bobby was almost a year old and growing rapidly. He was probably no more admirable than other small

children in Halaja, but Keith and Carrie thought that he was.

One night Keith took the boy to the pool in the center of the plaza. He sat down on a wooden bench and balanced Bobby on his knee.

It had been raining for six Earth-days, but now it had stopped. A cool, sweet breeze blew in from the dripping jungles. The night-glow from the massed clouds in the sky was like soft moonlight, coating the land with warm silver. The perfumes from jungle flowers eddied like streams in the air. Yellow firelight spilled out from across the plaza, and the houses of the village were black shadows under the pale



mountains of the clouds.

"Bobby," he said to his son, "we call this pool the Home of the Spirit. Perhaps there are those who would say that no spirit exists, but we know better."

The boy gurgled gleefully, paying no attention.

Keith filled his pipe with one hand and lit it with his lighter. "It won't be many years, Bobby, before you will be meeting other men and women before this pool—mariners from Acosta by the northern sea, industrialists from Wan, Mepas, and Carin, great hunters from Peuklor, people from far Equete, where space flight is already a dream. You will be dancing with them, and singing with them, and sharing ideas with them. You will be one of the participants from the first generation of men to live on Venus. You will meet the others who are growing up on this world, meet them in peace because that will be your way of life, and together . . . what's that, Bobby?"

Bobby burped genially.

Keith laughed. "You won't understand what I'm saying, son. Not yet. But one day you will understand. One day—"

He felt a hand on his shoulder.

"Getting pretty melodramatic for an old man, aren't you?" asked Carrie, kissing his ear and sitting down at his side.

"Well, I sure wasn't bowling Bobby over with my profundity," Keith ad-

mitted. "He's bored."

"Give him a few years, darling."

Keith looked at his wife in the cloudlight. Her blue eyes were brighter than they had ever been on Earth. Sitting there by him, so small in the night, she was filled with a relaxed happiness that made him feel good just to be around her.

"In a few years Bobby will have a robot for an old man," he said.

"I know."

The cool breeze that had swept in after the rains faded to a sluggish warmth. A horde of hungry insects flew into the plaza, intent upon demonstrating the digestibility of human blood. All the people had been injected to keep the pests off, but they were a humming nuisance just the same.

The three of them walked away from the pool under the glowing clouds and went inside.

Eight Earth-months had passed.

Outside, in the plaza surrounding the Home of the Spirit, the drums throbbed rhythmically and a ritual chant filled the air. The robot humanoids were conducting another in the round of sacred ceremonies, while the children of the village crowded around the pool raptly, absorbing the words and music and sentiments that were fast becoming their own.

Inside, in the pleasant center room of their wooden house, Keith and Carrie sat on a barkcloth mat and lis-

tened. Across from them were Ruth and Bill Knudsen.

"One thing about being human," Bill said, "you can let the robots do all the work, at least until the kids grow up enough to wonder why we're not out there yelling and stomping with the rest."

"What made you come out here, anyway?" asked Keith.

Bill shrugged. "Ruth tricked me into it."

His wife, a rather plain woman with a deep strength that made her attractive, nodded. "Too many pretty gals back home. I figured Bill was safer here."

Bill and Ruth seldom talked seriously about themselves. Keith wondered whether it was a symptom of the age they lived in, or if men had always been reticent about the things that really counted.

"It's been wonderful having you and Carrie with us," Ruth said. "We'll miss you when you go."

"You may not feel that way four months from now."

"I think we all need a little ceremonial drink," Bill boomed. "This joint is getting maudlin."

Keith turned to Carrie. "What say, high priestess?"

"As long as it's purely ceremonial," Carrie said, "it would seem to be our duty."

"By a strange coincidence," Bill informed them, "I happen to have some good stuff concealed in my quarters."

"Go, boy," Keith said.

Bill ducked through the connecting tunnel, his bare feet thumping on the boards, and returned with a fifth of bourbon. Carrie produced four clay drinking utensils and a pot of water.

They drank up, gratefully. Much as they all loved Halaja and what it stood for, it was still not their village. They were all playing parts, and once in a while it felt good to get away.

From the plaza came the thudding of the drums and the undulating chants of the robot elders of Halaja. The children were very quiet.

"What we need are a few ceremonial toasts," Bill said.

"Check," said Keith.

They drank one to Old Man Vander-vort.

They drank one to Earth.

They drank a few more on general principles.

By the time the fifth was gone, they were all feeling pretty good.

"I guess," Carrie said finally, "that this is as good a time as any to spring the glad tidings."

"Um-m-m," said Keith. "Spring away."

Carrie brushed a strand of her blond hair out of her eyes. "To be unutterably crude," she said, "I'm pregnant."

Keith found himself on his feet. Suddenly aware that his mouth was open, he closed it and sat down again.

Bill and Ruth laughed their congratulations.

Carrie looked thoroughly pleased with herself.

"We'll have to hurry up and get out of here," Keith said. "Get back to Earth, hospitals—" He stopped, catching the expression on his wife's face.

"Easy does it," Carrie said. "No hot water needed yet."

"Sorry," Keith subsided.

"Darling," she said slowly, "do we have to go back? Do you really want your child to be born on Earth?"

The drums stopped and the singing died to a lonely humming in the plaza by the Home of the Spirit.

Keith smiled. "It's up to you, Carrie," he said. "It's up to you."

#### IV.

They stayed where they were.

One year later, after their son had been born and named in the naming ceremony of Halaja, Keith got a message from the Old Man. Mark flew it out to him, and it read:

MY DEAR KEITH: IT PAINS ME TO STATE THAT I AM UNHAPPY ABOUT YOUR REPORTS ON OUR PROJECT. I HAVE FOUND THEM SKIMPY AND UNINFORMATIVE. PLEASE MAKE THEM MUCH MORE DETAILED IN THE FUTURE. IT IS IMPERATIVE THAT I KNOW EVERYTHING THAT TRANSPiRES IN OUR COLONIES. REPEAT: IMPERATIVE. HOW IS THE CEREMONIAL FRAME-

WORK SHAPING UP? ARE THE INDUSTRIES OF WLEN AND MEPAS AND CARIN PROPERLY INTEGRATED WITH THE SPECULATIONS OF THE EQUETE SPACE PHILOSOPHERS? HOW ABOUT THE INDIVIDUALISTIC ATTITUDES OF THE PUEKLOR HUNTERS? I MUST KNOW EVERYTHING. HOW MUCH LONGER WILL YOU STAY? HOW ARE THE ROBOTS WORKING OUT? WHEN WILL THE FIRST DEATHS OCCUR? SOME SLIGHT AGITATION HERE. RUMOR THAT ONE OF OUR SHIPS REPORTED IN TAKE-OFF. RUMOR OF INVESTIGATION. BUT I CAN HANDLE GOVERNMENT. FOUNDATION STILL GOING SMOOTHLY AND MORE CHILDREN ON THE WAY. MUST KNOW COMPLETE RESULTS OF ALL NEW DEVELOPMENTS. UNDERSTAND YOU NOW HAVE SON. PLEASE MAKE ALL REPORTS MORE THOROUGH IN FUTURE. (SIGNED) JAMES MURRAY VANDERVORT.

The message worried Keith, and he did not show it to Carrie. The rather crotchety demands for fuller information were typical enough for Van, but the hints of possible suspicions on the part of the government were disquieting.

Despite the Old Man's power and influence, he did not run Earth. Undynamic as the world government might be, it still could not be ignored.

Peace on Earth had been won at the price of conformity. The era of plenty was founded on a stable system where people thought alike, believed alike, talked alike. The dream of mankind through centuries of war and hate and fear had been achieved. Man had what he had always wanted, and he was in no hurry to change. His motto was simple:

#### DON'T ROCK THE BOAT.

Well, the Venus colonies were rocking that boat.

They were blowing up a storm.

It was true that they were not exactly illegal; there were no laws against fresh cultures on Venus. No one had ever thought about them—there quite literally were no legal precedents.

They were *outside* the law.

But if they were discovered the game was up. Their entire effectiveness depended upon secrecy. The colonies had to have time to grow up and develop and charge their lifeways with life and vigor. They had to contact Earth—not the other way around.

Once, to Keith, it had all been an unusually interesting scientific experiment; nothing more than that. He had not, of course, been worried about the outcome. There was absolutely no danger that the new cultures might flower only to bring war back to a peaceful Earth. The colonies were planned so that war was impossible.

The early socioculturists had made a science out of the primitive social

disciplines of psychology, sociology, anthropology, and economics. The Venus colonies were products of that science.

One thing about a science: it works.

If an engineer knows his business, his bridge does not fall down.

If a socioculturist knows *his* business, his culture does what he wants it to.

Keith, in a way, had been building a bridge. True, it was a bridge on the grand scale, but still it was a bridge. He had not been too emotionally involved in it.

That was before he had come to Venus.

That was before he had lived in Halaja.

That was before he had known that his own son would have to walk across the bridge he was building.

He did not want anything to happen to that bridge.

And, holding the message in his hand, the old question nagged at his mind. He could see the Old Man as he had last seen him—a flushed, bearded gnome, *pad-padding* across the rug in his stifling, incredible room, the fanatical blue eyes that peered into the dark and shadowed corners—

This was the Old Man's bridge, too.

He was the one who had insisted that it be built, knowing he could not live to see it, or benefit by it.

Keith's question came back, insistently:

*Why?*

The years drifted by, and for Keith and Carrie they were supremely happy years.

They raised their two sons—Bobby, the adopted one, and Keith, their own child. They watched them grow, strong and straight, and they never regretted depriving them of Earth. Each child loves the culture into which he is born, and for Keith and Bobby Halaja was home.

The days were long and filled with work and laughter. The Sirau-fruit flowered in the cleared jungle fields and the great hawklike birds splashed vivid colors across the rolling gray clouds of the sky. In the field by the slow blue water of the Smoke River games were played with the fierce intensity of a World Series on Earth—and, in fact, one of the games played was baseball. It was strange to hear the clean crack of a bat singing through the humid Venusian air—

There were expeditions through the jungles, encounters with strange animals, the perfumed smell of tropical flowers.

And always, endlessly, the rituals and ceremonies that were to be Halaja's contribution to the emerging pattern of life on Venus.

There were the great torrential rains that swept through the log houses of the village—rain that drummed on the plank passageways and churned the water in the little circular pool in the center of the plaza. At night, the clouds glowed with the soft silver of an

ageless enchantment, and Keith and Carrie knew what it was to fall in love again.

The children grew until they were no longer children.

The robot humanoids began to fade into the background, as they aged before the children's eyes. The first of them was scheduled to die in less than a year.

Earth seemed very far away.

And then, fourteen years after he had first seen the village of Halaja, Keith heard the sound he had been dreading.

There was a sudden jagged scream that split the clouds above his head, a sharp roar that clattered through the gray rain of a long, lazy afternoon. Keith could not see the thing, but he knew what it was.

A spaceship.

And not a Foundation ship, either.

The world government still had a few spacecraft on operational status—a few lonely skeletons left from the half-forgotten fleet that had long ago explored the solar system and pronounced it useless.

A few ships used for infrequent investigations, a few ships to back up the slogan:

**DON'T ROCK THE BOAT.**

Keith Ortega stood in the rain and swore.

"Carrie! You look after things—tell Bill I'll be back as soon as I can."

"Be careful, Keith." She stood in the doorway of their home, small and

fragile in her shirt and shorts.

Little Keith—who was not so little any more—and Bobby listened curiously to the echoes of the decelerating ship and wondered what their father was worried about.

"What's up, Dad?" asked Keith.

"Can we go with you? We can help," Bobby assured him.

Keith looked at them with what he hoped was a stern expression. "You're not children now," he said. "You're young men, and you have responsibilities. Have you forgotten about the ceremonies tonight?"

"Sorry, Dad. We just thought—"

"I'll attend to this. It's nothing important."

"Well, gee, what was that funny noise?"

"That's what I want to find out," Keith said. "Some sort of storm up above the clouds, I think."

"O.K., Dad."

He left them in the rain and sprinted out of the village and along the pathway that led to the Smoke River. He swam the river, which was hardly wetter than the pelting rain in the air, and hurried along a concealed path through the jungle. By the time he reached his hidden emergency copter he was breathing hard.

If those kids ever *saw* that spaceship, there would be hell to pay.

He took the copter up into the sea of gray rain, gunned it to full power, and headed for the dome-shaped station house far to the east. Undoubt-

edly, they had tracked a Foundation ship from Earth. Since those ships were carefully shielded from the native colonies, they always landed at the station clearing, where Keith himself had landed fourteen years before.

Keith stared into the rain and clenched his fists.

If that ship was a government ship—and it had to be—then there was going to be trouble.

He could not bear the thought of failure now.

Somehow, that ship had to be *stopped*.

In eight hours, he landed at the station clearing.

The rain had stopped and he saw the ship as soon as he came over the dripping wall of the gray-green jungle. It was a big one, and it had the blue symbol of the world government on its nose. He set the copter down next to it, his heart thumping like a hammer in his chest.

The ship loomed silently over his head, its very hugeness impressing upon him the absurdity of his own plans. What could he do—attack the thing with a club and a handful of rocks?

It was still daylight, but he saw a gleam of yellow light inside the dome of the station house. He didn't know what he was going to do, but he *did* know that he was going to do something.

He walked across the field, acutely

aware of the vast ship behind him. Could that ship be destroyed? Would he do it if he could? And if he did, wouldn't that just confirm the suspicions on Earth—wouldn't they send more ships, more men?

He shook his head. He wasn't thinking straight.

The cold knot in his stomach drew tighter.

There were no windows in the round station house, so there was no way for him to sneak a look inside. He simply walked up to the door, knocked, and went in.

A large central room, stacked with supplies. A door to his right, where babies were received. Two humanoid robots conversing in low tones against one wall. A bright yellow light in the ceiling.

Toward the back, another door, partly open.

Voces.

Keith picked his way through the piles of supplies and knocked on the half-open door.

"Who is it?" Mark's voice.

"Keith."

"Come on in!"

He went inside. There, at the table where he and Carrie and Mark had shared their coffee so many years ago, there was more coffee.

And a man in a uniform.

"Keith, this is Captain Nostrand—Space Security. Captain, this is Keith Ortega."

They shook hands.

"I've heard of you, sir," Captain Nostrand said. "I never expected to meet you under these . . . unusual . . . circumstances."

Keith sized up the captain. After the mental image he had built up in his mind of a veritable ogre sent out from Earth to crush his dream, Captain Nostrand was a pleasant surprise. He was middle-aged, relaxed, with graying hair. He had quiet brown eyes and an easy smile.

He *looked* like a nice guy—if that helped any.

"Mark, what's the deal?"

Mark Kamoto shrugged and poured Keith a cup of coffee. "I guess you've about figured it," he said.

"I heard the ship. I knew it wasn't one of ours."

Captain Nostrand sat down and crossed his long legs. "The government has been getting reports off and on of unexplained spaceship take-offs," he said. "They finally decided to find out what was going on. They tracked one ship here, and sent me up to have a look-see. Simple enough."

"How many men are with you?"

Nostrand smiled quizzically. "You planning on starting a fracas, Dr. Ortega? I'm unarmed, of course."

Keith felt the hot blood in his cheeks. "Sorry," he said. "I'm upset—to put it mildly. Look, what are you going to do?"

Nostrand sipped his coffee. "What do you think?"

"You can't go back and tell them,

captain. This is too big. You don't understand. You can't tell them."

"Want to bet?"

"Easy, now," Mark said. "Drink your coffee, Keith. It won't do any good to go off half-cocked."

Keith downed his coffee at one searing gulp.

"You're mighty nervous," Captain Nostrand grinned. "What have you got out in that jungle anyhow? A swamp full of monsters?"

Keith managed to laugh, not too successfully. "Hasn't Mark told you?"

"I haven't said anything," Mark cut in. "But the captain has sharp eyes."

"Has he got a cigarette?"

"Sure," said Nostrand. He fished out a pack and handed one to Keith. The smoke tasted good.

"Look, Captain Nostrand. I'm sorry I came busting in here like a fugitive from a nightmare. It's just that this thing is terribly important—more important than you can imagine. One word from you now will destroy two decades of work. You and your crew have got to be made to see—"

"The crew's robot," Nostrand said. "I'm the only one you've got to deal with."

"Then look—"

"You listen to me a minute," Captain Nostrand said slowly. "I wasn't sent out here to pass judgment on whatever it is you're doing. That's not my job. I was just sent out to see if

you're doing anything up here. You are, that's clear. I'll go back and tell them there's an unreported settlement here, and that's the end of it as far as I'm concerned. Nothing personal, understand?"

Keith slammed his fist down on the table. "It *is* personal!" he said, amazed at his own vehemence. If he had needed any proof that the Keith Ortega who had come out here from Earth fourteen years ago was dead, he had it now.

Outside, the rain started up again, swishing down the sides of the station dome.

Desperately, Keith leaned across the table, staring at the man in the old uniform of Space Security. There was one chance, a long one—

"Nostrand," he said carefully, "how many men besides yourself are still in the space service?"

The captain poured himself another cup of coffee. "You already know that, Dr. Ortega."

"A hundred? Two hundred?"

"A hundred and twenty."

"Mostly maintenance men?"

"Yes."

The rain came down harder, rushing like a river over the slick bulge of the station house.

"What made you stay in the space service, captain? What made you stay when space was dead?"

Captain Nostrand shrugged, but his brown eyes narrowed.

"How many flights have you made, captain? How many in the last thirty years?"

"Four," he said slowly. "Three were runs to Luna."

"What made you stick it out, captain?"

Nostrand stood up. "That's none of your business."

Keith faced him. "It *is* my business. I know you, Nostrand. I know why you went out into space when other men stayed at home."

Captain Nostrand shrugged again.

"Captain, listen. I'm asking you to wait one Earth-month before you go back. Let me show you what we're doing here—all of it, every bit of it. If you still think it's your duty to tell them after that, O.K. If you don't, then you can report that the rocket they tracked was just a private ship out on a lark—some crazy back-to-the-good-old-days enthusiast. Vandervort can fix it up—yes, I'll tell you all

about him, too. Captain, you've *got* to stay now—it's your duty to find out everything they want to know. Radio back and tell them it will take you a little time to investigate. Will you do that, Nostrand?"

"What's in it for you?"

Keith kept his voice even. "If you understand what Venus means, you'll never tell them. You know and I know that Earth may never go back into space on her own—it's too late. I can't put this into words, captain. But I know what made you go into space even when space was almost forgotten. I know. Have *you* forgotten?"

"I haven't forgotten."

"O.K. I'm asking for a month."

Captain Nostrand sat down and sipped his coffee. He listened to the rain roaring down outside. He looked at Mark Kamoto, who remained silent.

"You make a mean speech, friend," Nostrand said finally, "I can see your month. It had better be good."



Keith was exhausted but confident.

"Pal," he said, "you ain't seen nothin' yet."

Beyond the station house, the warm rain fell into the thick jungles and the long gray afternoon began to fade into evening.

## V.

At the northernmost extremity of the one inhabited continent of Venus, a brown peninsula thrust out into the swells of a vast gray-green sea.

In the copter that hovered just under the cloud masses that roofed the world, too far away to be seen with the naked eye, Ralph Nostrand brought his viewer into focus and looked into it intently.

"So that's Acosta," he said.

"Yes," Keith said. "Watch off the coast there—see those ships coming in? They're whalers."

"Whalers?"

"Not really whales, of course. They're true fish, not mammals. But they're plenty big enough—and they hunt them with hand harpoons."

"Funny looking place."

The viewer showed a small settlement of perhaps one hundred gabled stone houses, placed on a shelf of rock overlooking the tossing sea. Most of the men and boys were out in the boats, but the women of the town were clearly visible in the streets.

"There," Keith said. "The near boat crew is beaching one."

In the viewer, the men and boys leaped out of their sturdy canoes into shallow water. They all grabbed a line from the near ship and ran with it up onto the beach. They formed a row and heaved.

An enormous black shadow-shape slid out of the sea and was hauled up on the rocks, its great tail still bobbing in the gray-green water. It rolled over, white belly upwards, and the men be-



gan to dance around it, chanting.

"*Whew*," said Nostrand. "That's quite a baby."

"Acosta is a pretty rugged place," Keith said. "It's a colony of maritime adventurers, as I told you. It's a people who will have a long tradition behind them of dangerous voyages."

Ralph Nostrand eyed him. "Shrewd."

"I know my racket."

The captain returned to his viewer and watched for a long time. Finally he nodded. "Next," he said.

Mark took the copter up higher to hit a favorable wind belt, and they flew through the warm clouds above the jungles, moving inland. In four hours, they went down again.

The first of the Three Cities was spread out on the viewer.

"Wlan?" asked Nostrand.

"That's right."

Wlan was a far cry from the seaside settlement of Acosta. This was a genuine small city; with a population of perhaps five thousand people. It was neatly arranged into squares, with snug modern houses, and it was dominated by two large buildings that could only be factories.

"The Three Cities are our industrialists," Keith said. "Of course, they're not turning much out yet, and the economy is highly artificial at present, but they've got the basic techniques down pat. We've set up an embryonic technological culture, and the kids have been brought up to appreciate what that means. We've given

them enough leads so that they'll have aircraft within a century."

Nostrand nodded. "One thing I've been meaning to ask you, Keith."

"Shoot."

"Is it really fair to bring these kids up here and determine their lives for them? It seems—sort of wrong, somehow."

The copter veered toward the southeast, rising again into the clouds.

"I know what you mean," Keith said. "It seems to deny them their free will. That's not true, though—you know that yourself, if you'll just stop a bit and think. After all, a child is *always* born into a culture he has not built himself; that's a characteristic of human beings. In that sense, a kid's future is always determined for him. What he does with the materials of his culture, though, is up to him. So long as he has the stuff, he'll make out O.K. anywhere. Don't forget that to the kid this *is* his culture; it's home. He's never known anything else, and he'd fight to stay there. And don't forget, too, that those kids were abandoned by their own parents on Earth. This beats a Foundation orphanage, believe me."

"I surrender," Nostrand grinned.

"Excuse the sermon, Ralph. It's hell to really have faith in something again. We're not used to it, back on Earth."

The copter paused briefly at Mepas and Carin, the other two nearby in-

dustrial towns, and then flew southwest across the continent. They set the copter on automatic, caught what sleep they could, and in sixteen hours were high above the skin tents of Pueklor. The gray sky and the massed oceans of the clouds had not changed—and there were still eight Earth-days left before the coming of the pale Venusian night.

"Looks like an Indian tribe," commented Nostrand, looking closely into the viewer. "I remember seeing some old photographs somewhere."

Keith nodded. "They're modeled on the ancient Plains Indians of North America," he said. "You'll notice how different the country is here—tall grass instead of jungle. Pueklor has a basically hunting culture; they go after an animal not too unlike the old bison, but much slower. They hunt 'em on foot."

Far below, the skin tents of Pueklor stood in a large ring in the grassy fields of the southwestern plains. Curls of smoke drifted up into the still air and a group of children were running races along the banks of a sluggish river.

"You'll catch it more clearly when you see some of them in Halaja," Keith said. "Pueklor is an extremely proud culture—filled with the joy of living, if I can put it that way. They'll lend a very real *esprit de corps* to the continental culture that will be here a century from now."

The copter swung eastward through

thick sheets of rain, and by the time they reached Equete in the southeastern hills the three men were bone tired. Nevertheless, the sight of Equete nestled in a rocky valley picked them up.

Equete was a series of low, rounded rock structures that harmonized beautifully with the rugged grandeur of its surroundings. It blended browns and pinks and greens into a pleasing pattern that accentuated the banded colors of the land.

"That's your baby, Ralph."

Nostrand looked down at its image in the viewer and tried to see in Equete what he was supposed to see.

"Not much visible from here," he said.

Keith smiled wearily. "The business of Equete is ethics—ethics and elaborate social complexities. In addition, this is where the basic research is being done that will one day lead to the independent development of space flight on Venus. See that tall, domed structure over there? We've given them enough hints so that they'll develop a cloud-piercing telescope before too many years have gone by. Philosophically, we've already provided them with a logical picture of the universe—and their ethics *demand* space flight as the first great step in the fulfillment of man's destiny."

"Sounds good," Ralph said.

"It is good," Mark corrected.

"It's all so complicated," Ralph Nostrand said tiredly. "I try to see it

the way you do—but it isn't easy. All these new cultures, growing up independently of Earth, groping toward space travel in a hundred years or so. Don't forget what Earth is like these days—what if these people come swooping down and smash it to pieces?"

"When you see the ceremony at Halaja," Keith said, "you won't worry about that."

Captain Nostrand was unconvinced, but he held his tongue. The copter lifted again into the clouds and flew northward, back to the hidden receiving station where the great Space Security ship still waited in the late morning fog.

Keith closed his burning eyes and tried to relax. He knew that Nostrand was an unusual man—he had to be or he would never have gone into space in this century of stability and easy living. But could he see Venus as they saw Venus? Could he see Venus as the cradle of a new and vigorous culture that would jolt Earth from the rut into which it had fallen?

If the Coming Together at Halaja failed to move him, they were through.

And this was the first of the vast ceremonies to be conducted almost entirely by the children who were now young men and women. The old robot humanoids would stay strictly in the background. Surely their teaching had been effective; it *had* to be.

But when Keith dozed off into a troubled sleep, his dreams were as

gray and cheerless as the wet clouds above his head.

It was the time of the Coming Together at Halaja.

Five Earth-days were left out of the month that Keith had asked for.

With his wife and Captain Nostrand he stood in the doorway of his log home and waited for the ceremony to begin.

It was night, and the soft silver cloudlight glinted in the Home of the Spirit and touched the central plaza of Halaja with pale and enchanted fingers. Great orange fires blazed inside the ring of the wooden houses and passageways, throwing black, twisted shadows on the walls.

Drums beat with a slow rhythm and the mixed voices of low, insistent chants drifted up to the roof of the world and lost themselves in the glowing mists of night.

For many days and many nights the people had come across the swamps and jungles of the great continent to Halaja. They had come as they had always come, as their fathers had come, and as their fathers' fathers before them.

Or so they believed—for had not their own fathers told them so, throughout the whole of their lives?

From far Acosta by the northern sea they had come, and from the three cities of Wlan, Mepas, and Carin. They had walked from the swaying fields of Pueklor and from the rocky

hills of Equete.

It was the time of the Coming Together.

Not all came, of course. These were only selected delegates who made the jungle trek and who would then return to their people as they had always done.

The orange fires crackled and the drums throbbed.

A new chant began.

*"Oh friends from far and near, we come together as we have always come—"*

And the answering chants came back, from the men and women of Acosta and the Three Cities and Pueklor and Equete:

*"Always come, always come . . ."*

*"We come together, all different, all the same, in peace for all men are brothers—"*

*"All men are brothers, all are brothers . . ."*

Side by side they sat—rough seamen and happy industrialists, proud hunters and serious philosophers from far Equete.

The drums beat faster.

The orange fires painted shadow-dances along the walls.

It was the time of the Coming Together.

Keith felt his heart beating with fierce pride in his chest, and he held his wife close by his side. Here in the night under an alien sky that glowed with the light of a million moons—here, at last, was a dream that could

not die.

Ralph Nostrand was silent, watching.

The old people—it was hard to think of them as robots, for they had been fathers and mothers and friends—stayed in the rear circles, in the shadows, watching the children they had led through life.

It was impossible to believe that they were not proud.

For many long hours the ceremony went on through the long, long night. There was feasting and singing—and a little gay romancing among the young men and women from faraway lands, for these people were not saints.

Fifty hours after the Coming Together had begun, the old, old chant was started by the pool that was the Home of the Spirit. The words were mysterious and strange, but did not the gods say that one day they would be filled with meaning?

Keith saw his two sons singing by the pool.

He felt his wife proud and happy by his side.

*"Beyond the clouds that roof our world, beyond the rains that cool our skies—"*

*"Beyond the clouds, beyond the rain . . ."*

*"Beyond our skies lie other skies—"*

*"Other skies, other skies . . ."*

*"Beyond the great sea where floats our world, beyond our sea floats another shore—"*

*"Another shore, another shore . . ."*

*"And there in the great beyond the green Earth waits for us, waits for the coming of our silver arrows—"*

*"Silver arrows into beyond, beyond . . ."*

*"The green Earth waits in the great beyond, and there our far brothers dance under a clean blue sky—"*

*"Silver arrows into beyond, beyond . . ."*

*"Oh, our brothers of Earth are waiting for us in the great beyond—"*

*"Waiting, waiting for the Coming Together!"*

*"Beyond the clouds that roof our world, beyond the rains that cool our skies—"*

*"Waiting, waiting for the Coming Together!"*

The drums stopped and there was a silver silence.

A light rain fell from the glowing clouds and sprinkled the plaza with cool, sweet water.

Keith could not speak. He held his wife's hand and shared her deep understanding. No matter what happened, he was glad that they had come to Venus, glad even if they failed, for it was better to fail than never to have tried at all.

He turned slowly and looked at Captain Nostrand.

Nostrand stood very straight, the firelight touching the old shadows on his face.

His eyes saw far beyond the village of Halaja.

He smiled and held out his hand to

Keith. He nodded firmly.

Around the plaza the drums rolled and the singing began again.

## VI.

Five years after Ralph Nostrand had left for Earth, the village of Halaja still lay peacefully by the slow blue water of the Smoke River.

Half the old robots had died and been buried, and Bill and Ruth Knudsen had gone home to a small farm in Michigan.

It was time for the Venus colonies to strike off on their own. It was time for the men and women who had guided the new world to return to the old world.

"I wish we could stay, Keith," Carrie said.

"Me, too. But this isn't our world, and we're not needed any more."

"I never thought that it would be harder to leave than it was to come."

"I never thought we'd be here nineteen years, either."

"I'm glad we won't have to say good-by to our boys."

"It'll be rough enough as it is, Carrie. We'll just bring our old reasonable facsimiles in and let 'em die. I hate to do that to the boys, but they mustn't suspect anything."

They walked down the jungle pathway toward Halaja, arm in arm, already trying to remember the world they had to leave. Fortunately, the two robots that had originally been

designed to replace them when they went back to Earth were still waiting at the station clearing.

Robots had infinite patience.

They would go to Halaja when Keith and Carrie slipped away, and there they would sicken and die. They would be buried with the rest in the clearing by the Smoke River, where one day their sons, too, would lie—

"I still wish we could stay, Keith."

He kissed her and ruffled her blond hair. "It's our turn now, baby. We mustn't rock the boat."

Still, they postponed it as long as they could.

They found excuses to stay in Halaja with their sons.

It took the message from Nostrand to make them leave. It came one night and Mark flew it out in the last station copter. It read:

KEITH: OLD MAN VANDER-VORT VERY ILL AND NOT EXPECTED TO LIVE. HE WANTS TO SEE YOU IF YOU CAN COME IN TIME. SHIP ON WAY TO YOU NOW. ALL O.K. AT THIS END. WHAT'RE YOU DOING UP THERE—GOING NATIVE? (SIGNED) RALPH.

"Well," Carrie said, "he couldn't live forever."

"He took a stab at it, though," Keith said.

"We'll have to go."

"Yes. We'll have to go."

They left the village that had been their home one night in the rain,

while their sons slept. The two robot humanoids who were their identical twins climbed into the bed that was still warm from their bodies.

Keith and Carrie walked together through the plaza of Halaja, past the Home of the Spirit, and out the gate. The rain was cold in their faces. They walked along the pathway through the Sirau-fruit to the damp athletic field to the west of the village.

They did not look back.

The copter lifted them into the silver clouds for the last time and carried them east to the station clearing. They said good-by to Mark Kamoto, who would follow them a year later on the voyage of no return.

The ship that had carried them from Earth nineteen years ago waited now in the rain to carry them back again.

They looked one last time at the gray-green wall of the jungle and the yellow light spilling out from the domed station house. They looked one last time at the banks of luminous clouds that flowed like a sea of moons through the sky.

They looked one last time westward into the night, toward the sleeping village of Halaja.

They boarded the ship.

Ahead of them was Earth, and a dying man. Ahead of them, lost now in the immensities that swam between the worlds, was an old, old man with a white beard and nervous blue eyes that darted through the shadows of a

too-hot room.

Ahead of them was James Murray Vandervort and a final question.

*Why?*

The land was crisp and hot and clean under the Arizona sun. The air was charged with a fresh golden tang that made you want to stand in the wonderful sand and fill your lungs over and over again.

The sky was blue and cloudless. The greens of the desert plants were as bright and vivid as if they had been newly painted.

Like flowers, Keith and Carrie lifted their faces to the wind and sought the sun.

It was good to be back.

There was no time to go home, and so a Foundation copter lifted them up into the desert air and carried them westward toward Los Angeles. They found themselves flinching involuntarily at the freight liners that roared through the air lanes and the flutter of copters that filled the sky like butterflies. Los Angeles was so vast and white and gleaming that they could hardly take it in. Far below them, dots on the calm blue Pacific, the surfaced subs bobbed like schools of porpoise.

The copter swung north along the coastline and then veered off to the right up Vandervort's Canyon. They landed on the patio field of the huge estate and an old butler took them in tow.

They walked through the richly-carpeted hallways and up the marble stairs to the second floor. They walked down the long gray passage and knocked on the mahogany door.

A tiny green light blinked on in the center of the door.

Keith and Carrie entered the huge room, and it was almost like stepping from Earth to Venus. The hot, humid air boiled out into the hallway like an overflowing lake.

The room had not changed. The wall-to-wall brown rug was still there, and the tables and chairs and desks and fireplaces and flowers and books and drapes—

But the Old Man had changed.

Nineteen years had taken their toll.

Vandervort was one hundred and twenty-four years old.

Even the geriatrics specialists could not save him now.

The Old Man still sat in his huge, soft chair. He seemed very tiny now, and lost. His white beard was a dirty gray and his red face was blotched with unhealthy pink. His blue eyes were dull and glazed.

Ralph Nostrand stood by his side, his face lighting with a smile of welcome.

They shook hands.

"Who is it?" choked the Old Man. "Who's there? Is somebody there?"

Keith leaned down toward him. "Van," he said. "Van, it's Keith Ortega."

James Murray Vandervort stiffened as though an electric shock had shot through his thin, dry body. "Keith!" he wheezed. He tried to get up, but could not move. "Is it really you—after all these years?"

"Yes, Van."

The dead blue eyes swam into focus. The Old Man breathed fast and shallow. "I have to know, Keith," he said. His voice was weak, a shadow of the boom that had once filled the chamber and chased the darkness away. "It's been so hard. *I have to know.*"

Keith waited him out, feeling a vast pity for the wreck of a human being that was dying in the big soft chair. Pity—and something more than that.

"I had to hear you say it, say it with your own voice," Vandervort said, talking very fast. His voice was such a whisper that Keith could hardly hear him. "Is everything all right? Is it working, Keith? Is it working?"

Keith made himself speak slowly and clearly. "You don't need to worry, Van. It's all right. Everything is all right. All the colonies are working just as we planned. Nothing can go wrong now. The new culture of Venus will come through space to Earth within a century. The new culture pattern will hit the Earth like a shot in the arm. We'll go on to the stars one day, Van. Everything is all right."

"I gave them the stars," the Old Man said, his voice very tired. "I gave them the stars, didn't I?"

"Yes," Keith said.

The Old Man sank back into his chair in sudden, exhausted relaxation. The old, dead eyes closed.

There was a long, hushed silence.

"Is he all right?" Ralph asked.

"I think so."

The Old Man began to talk again, his voice far away and lonely. "I've covered my tracks," he whispered, "but not too well. When the new world comes out of space, the people of Earth will check back . . . check back—"

The voice trailed away.

"Yes, Van?" Keith urged.

The Old Man sighed. "The people will check back. They'll find my name, find the records. They'll know I did it. They'll know, they'll know—"

Again, the thin voice faded.

The Old Man began to cry, softly. Keith leaned closer to hear him. Suddenly the Old Man tried to straighten in his chair and the faded blue eyes opened.

"Keith, Keith," he whispered desperately, "will they remember me after I'm gone? I gave them the stars. Keith, will they remember my name? *Will they remember my name?*"

The deep shadows of the vast, crammed room rustled around the walls, sliding in toward the firelight. Keith and Carrie and Ralph stood in the unnatural heat and stared at the tiny, dying man in the huge, swallowing chair.

"They'll remember you, Van," Keith said. "They'll remember you

long after the rest of us are a million years forgotten."

James Murray Vandervort smiled. The blue eyes closed again. "Remember me," he mumbled. "Remember my name. Remember my name—"

A doctor came in from the back door.

"You'd better go now," he said. "Mr. Vandervort needs to rest."

They walked out of the chamber, down the hallway, down the marble stairs.

"All that," Ralph Nostrand said. "All that, just to keep a part of him alive."

"He had no son," Carrie said quietly.

They walked toward the copter in the patio. Keith was thinking of Halaja, and the dark log buildings in the gray-green jungles of another world.

All that because a rich old man was afraid of the eternal dark.

"All that," he said, "because he was just a man."

Very late that night the three of them walked singing past the bright lights of Wilshire Walk.

A man and his wife, who had carried out an Old Man's plan.

A captain in a forgotten service, who had falsified a report to make a dream come true.

The violet government airsign hung in the air: DON'T ROCK THE BOAT.

They walked through the sign.

They walked on, arm in arm, singing under the frost of stars. They walked on and all who saw them that night on Earth wondered at the smiles they smiled and the strange, strange song they sang—

A song that whispered beyond the clouds—

Beyond the rains that cool our skies.

*Beyond . . . beyond . . .*

THE END

## THE ANALYTICAL LABORATORY

This time we have the tooth-and-claw division in the first-place fight. It's a bit hard to score the personal-appearance votes, incidentally—the verbal comments of friends and visitors to the office. Yet those votes represent, in a way, the non-letter-writing readership.

Oh, well . . . who ever said a poll guaranteed exactly the right answer? Anyway, here's how this one came out . . .

October, 1954 issue.

Place	Story	Author	Points
1.	"They'd Rather Be Right" (Pt. 3)	Mark Clifton & Frank Riley	1.30
2.	The Big Rain	Poul Anderson	1.33
3.	The Conners	Edward Peattie	3.25
4.	The Deviant	Everett Cole	3.75
5.	Training Aid	Walter L. Kleine	3.91

THE EDITOR.

# ON ATOMIC JETS

## BY J. J. COUPLING

*Agreed that atomic energy is mighty potent stuff—it's still not unlimited. There are jobs too big even for nuclear power, and where it isn't a matter of energy alone that counts, but reaction mass . . .*

I would like to think that it is the prerogative of any science-fiction writer to use any ideas or to make any assertions which have not been scientifically disproven. I suppose that we can justify travel to the stars at speeds approaching or exceeding the velocity of light by calling on Bergenholms, or space warp, or rhodomagnetic radiation, because we don't know just what these words mean, and in some unknown way they may displace relativity in scope and validity just as Zeus displaced Cronus. But science-fiction writers no longer send their heroes to the Moon in cars drawn by birds, and I see no reason why they should play ducks and drakes with atomic energy.

Just what can atomic energy do for us in space travel? Of course I can't give you the inside story, if there is one, for I have no inside information on either atomic energy or on rockets, and, if I did have any, I couldn't write this article. But all that is needed to tackle many aspects of the problem is

a sound knowledge of classical physics, a small dash of special relativity and an acquaintance with the progress of space travel as revealed year by year in the columns of ASF.

Perhaps the best way of getting started in a discussion of atomic energy is to decide what it will not do for us. Will it, for instance, get us to the stars with a velocity near to that of light? It certainly won't, even in some far day when we have much more effective atomic energy than we do now.

Einstein tells us that the energy of matter is  $mc^2$ . Now, the very best that the superman of the future could do would be to turn part of the mass of his spaceship—a part called fuel—completely into radiant energy and to shoot this radiation out behind him so as to give his ship a push. Suppose that he managed to do just this, converting a fraction  $A$  of his ship's initial mass into energy. Figure 1 shows the ratio of the velocity  $v$  which he would attain to  $c$ , the velocity of

light. We see that if one half of the total mass of the ship were changed completely into energy, 0.6 the velocity of light would be attained, while to attain 0.9 the velocity of light he would have to use up completely 0.77 of the mass of the ship. I can imagine no more gloomy prospect than that of a galactic genius flung into space at near the velocity of light. He could slow himself down only by a most improbable transformation of mass into radiant energy, and if he succeeded in such a transformation it would almost certainly cook him in one way or another.

Figure 1 is optimistic, however, as

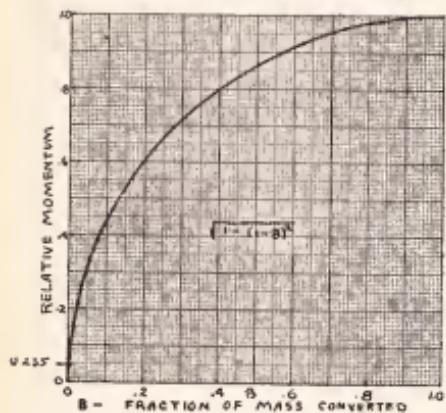


Figure 1: The ultimate in super spaceships: the mass of the fuel is turned completely into radiant energy and shot backwards to push the ship forward. In this way a fraction A of the starting mass of the ship is consumed. This curve shows the fraction of the velocity of light achieved.  $v$  is the final velocity of the ship and  $c$  is the velocity of light. The velocities in the equation may be meters per second or miles per century, since only the ratio of velocities is involved.

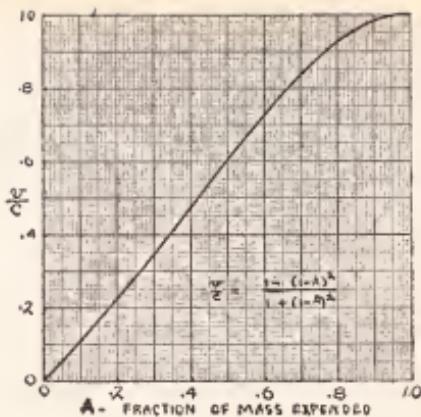


Figure 2: In a less-than-super spaceship a fraction B of the mass of each pound of fuel is consumed and the energy produced is used to fling the unconsumed fuel away and so to shove the ship forward. The curve shows the relative momentum gained by the ship, with 1 (at B = 1) representing that gained when the mass of the fuel is turned completely to energy. Expelling the inert part of the fuel helps to make up for only partial consumption, so that fission of  $U_{235}$ , which consumes only about 1/1,000 of the mass, could give almost 1/20 the momentum attained with complete conversion.

we see by examining Figure 2. Next to turning all of the mass of the matter used as fuel into radiant energy, the best thing to do is to turn the largest fraction we can into energy and then to use that energy in throwing the waste in the fuel, the ash, so to speak, backward as a rocket exhaust. In Figure 2, relative momentum is plotted vs B, the fraction of the mass we are able to turn into energy, or at least into energy we can use. In the fission of  $U_{235}$  about a tenth of one per cent of the matter is turned into energy, and we see that by using this energy

completely we could gain about 0.05 times, or 1/20 the momentum we would gain by converting all of the mass of the  $U_{235}$  into energy.

It may strike one as strange that a fuel only 1/1,000 as powerful as a perfect fuel can give 1/20 as much push, but this is an illustration of an important physical law which lies at the very basis of rocket travel. The energy used up varies much more rapidly with the velocity of the rocket jet than does the momentum, and it is the momentum which gives the push. Radiation travels with the speed

of light, and it has very little momentum per unit energy. It is much more effective to use energy to shoot matter away from a ship at a velocity much less than that of light than it is to use the energy in the form of radiation. This is startlingly apparent in Figure 3.

Here we assume that we have an atomic engine which produces power at a constant rate, and we ask, how much push or momentum do we get by using the energy to accelerate various amounts of matter? The curve tells us. We use as a comparison the

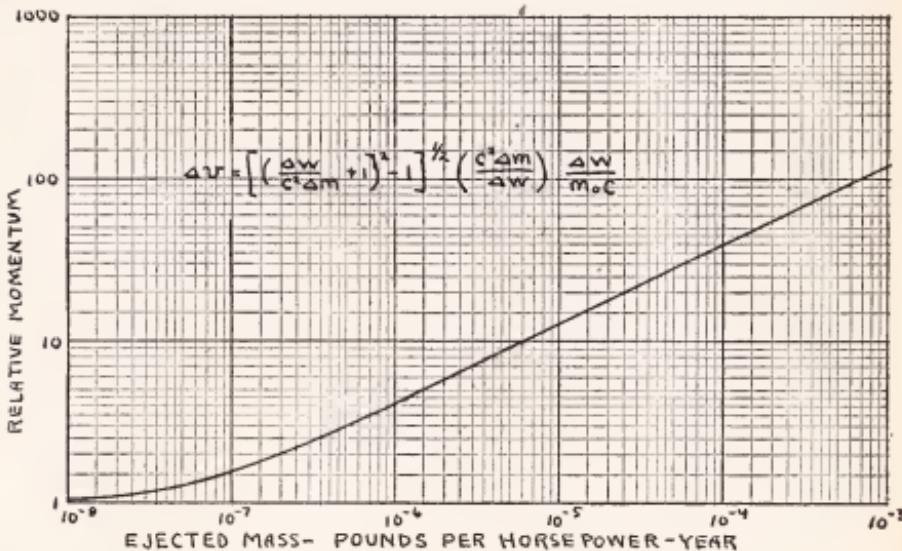


Figure 3: Radiation makes a bad jet because the ratio of momentum to energy is so low. It's much better to eject matter, which we may call reaction mass. The horizontal scale tells how many pounds per year we eject for each horsepower. Way to the left we eject nothing and get unit relative momentum. At the right-hand end we eject 1/1,000 pound per year for each horsepower, or 1 pound per year for each 1,000 horsepower, and the vertical scale tells us that we gain in momentum by a factor of around 120.

You'd better use meters, kilograms and seconds in the equation.  $c$  is the velocity of light, on energy  $\Delta W$  joules is used to expel matter of rest mass  $\Delta m$  and give a ship of mass  $m_0$  a velocity  $\Delta v$ . A watt is a joule per second.

amount of push or momentum we gain by turning all of the energy into radiation, and we call this 1 on the vertical scale. The curve shows that, by expelling a thousandth of a pound for each horsepower year, we increase the push by over a hundred times. That means that if we have a thousand horsepower spaceship and take a year-long trip, expelling just one pound of matter will make us go over one hundred times as fast as if we merely propelled ourselves by shooting radiation out behind.

While it has made the prospect of interstellar travel far from enticing, the foregoing discussion has perhaps whittled atomic energy down to size. For the foreseeable future, that size is solar-system size. The discussion has done one other thing: it has demonstrated an important fact of which we will hear more. High jet speeds can be wasteful of power because the ratio of energy to momentum increases with the jet speed.

How shall we tackle the problem of applying atomic energy to the modest objective of travel through the solar system? A good engineering approach would be to ask how tough the problem is without atomic energy, and then to see what atomic energy can do for us.

Recently Wernher von Braun has tackled the problem of constructing an artificial satellite and traveling from thence to the Moon and to the

planets by means of chemical rockets. He proposes the use of hydrazine as a fuel with nitric acid as an oxidizer. In vacuum, this gives an exhaust velocity of 1.74 miles per second. In the atmosphere the exhaust velocity is somewhat lower, but we will neglect this.

In Figure 4 the velocity attained by a rocket so fueled is plotted against the mass ratio, that is, the ratio of the mass of the ship plus fuel,  $m_2$ , to the mass of the ship alone,  $m_1$ . The curve is for a single stage rocket. Large effective mass ratios can be achieved with multi-stage rockets, and for spaceships which never touch a planet, very large mass ratios can be attained in single-stage rockets.

On the right of Figure 4 some very gloomy lines are drawn. The one labeled "Escape Earth" tells us that we need a mass ratio of 57 for this purpose. "Earth to Mars" (without landing) calls for a mass ratio of 160, while "Land on Mars" requires a mass ratio of 1,000. Further, these mass ratios must be achieved under the toughest circumstances. We are leaving under the pull of Earth's gravity, so acceleration must be high. Once free of Earth, an acceleration of 1g would take us places in a hurry, but at Earth's surface 1g will just hold us suspended while we use up fuel. And, in leaving Earth one must have a streamlined ship because of the atmosphere. The streamlining adds weight and air friction makes it hot for us.

If we were on Mars, we see that we could escape the planet completely with hydrazine and nitric acid with a mass ratio of only 6. As we are on Earth instead, the best thing is to go from the surface into a two-hour orbit lying 1,075 miles above the surface. This requires a velocity of around 4.86 miles per second and, according to our rough calculations, an effective mass ratio of 16. This is the first step Von Braun proposes in his program of getting into space. In "Across the

Space Frontier" he gives a detailed description of a three-stage rocket to take this step. I don't think that atomic energy as we know it can improve on this, and as we proceed some of the reasons will become apparent.

Let us assume, then, that we get into an orbit by means of chemical fuel and establish a space station about 1,075 miles above Earth, a station with an orbital velocity of about 4.4 miles per second. What about circling the Moon or the planets and

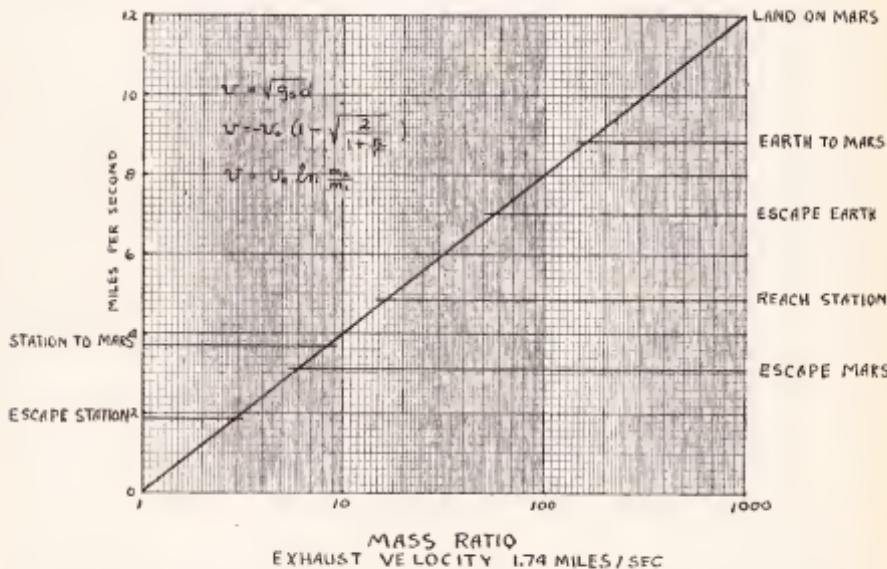


Figure 4: For a rocket fueled with hydrazine and nitric acid, with an exhaust velocity  $v_e$  of 1.74 miles per second. The horizontal scale shows the mass ratio; the vertical scale the velocity attained in free space.

In the first equation  $g_s$  is the acceleration of gravity at the surface of a planet and  $d$  is the planet's diameter. For Earth,  $g_s$  is 0.0061 miles per second per second; using this and the diameter in miles will give  $v$  in miles per second.

In the second equation,  $v_o$  is orbital velocity,  $r_o$  is orbital radius and  $r$  is the extreme radius it is desired to attain in an elliptic orbit.  $v$  is the velocity required to get into the elliptic orbit.

In the third equation,  $m_f$  is the mass of ship plus fuel,  $m_i$  is the mass of the ship alone,  $v_e$  is exhaust velocity and  $v$  is final velocity.

perhaps landing on Deimos or Phobos or some other body which has negligible gravity? According to Figure 4, escaping the station—which would enable us to circle the Moon—requires only the ridiculously low mass ratio of 3, while we could get out to the vicinity of Mars and back with a mass ratio of a little over 8, which is far less than that required to reach the station.

And it's so easy! There is no streamlining or wings. Our rocket can be a functional arrangement of fuel tanks, pipes and supports. Further, our rocket can be as flimsy as can be, for we need not accelerate at 8 to 10g as in leaving the surface of Earth, but instead we can spiral out of the station's orbit with an acceleration a small fraction that of gravity, treating our light, flimsy assembly of many fuel tanks tied to a low-power rocket motor as gently as can be.

Is there indeed anything wrong with chemically fueled rockets at all for travel from a space station?

One can't put figures for all possible trips on one chart, but one can pretty well sum them up in a table and a few formulae. Table I gives some data on the members of the solar system, including the velocity needed to escape the various planets. We want to know also the velocity needed to get from one orbit to another. Now, this is the economical way to get from one orbit to another: Start in the nearly circular orbit of one planet, an orbit of radius  $r_0$  and of orbital velocity  $v_0$ , and then speed up or slow down by some velocity  $v$  so as to get into an elliptical orbit with an extreme radius  $r$  which is equal to the radius of the orbit of the planet to which we wish to travel. The velocity  $v$  which we must add to or subtract from our initial orbital

TABLE I  
SOLAR SYSTEM

Planet	From Sun Millions of Miles	Year	Orbital Velocity Miles/Second	Diameter	Gravity	Escape Velocity Miles/Second
Mercury	36	88	29.7	3,000	.27	2.2
Venus	67	225	21.7	7,600	.85	6.3
Earth	93	365	18.5	7,900	1.00	7.0
Mars	141	1.88	15.0	4,200	.38	3.1
Jupiter	483	11.9	8.1	88,700	2.64	37
Saturn	886	29.5	6.0	75,100	1.17	22
Uranus	1783	84.0	4.2	30,900	.92	13
Neptune	2793	165	3.4	33,900	1.12	14
Pluto	3675	248	2.7	3,500	.9	6.5

velocity is given by

$$v = v_o \left( \sqrt{\frac{2}{1 + \frac{r_o}{r}}} - 1 \right)$$

For instance, to calculate the velocity we need to escape from the station we have to know the radius  $r_o$  of the orbit of the station, about 5,170 miles, the radius  $r$  we wish to end up at, which we take as infinite, making  $r_o/r$  equal to zero, and the orbital velocity of the station, which is 4.4 miles per second. The equation tells us that we have to speed up by 1.82 miles per second if we wish to escape the station. This assumes that we speed up suddenly, but what we want is an estimate and not an astronomer's figure.

Once free of the station we can calculate the extra speed we need to get into an elliptical orbit which touches the orbits of, say, both Earth and Mars. Here we need to know the radius of Earth's orbit, 93 million miles, the radius of Mars' orbit, 141 million miles, and Earth's orbital velocity, 18.5 miles per second. Our equation tells us that we need an additional velocity of about 1.85 miles per second to get from Earth's orbit into an orbit grazing that of Mars.

Most space travelers visit the moons of Jupiter and the rings of Saturn sooner or later. The prospects here are not quite so happy, for this means getting almost completely free of the orbit of Earth, and that would take

about 7.7 miles per second which, when added to 1.8 miles per second to escape the station's orbit, makes 9.5 miles per second. To be more precise, it takes 7.2 miles per second to get from the station to Jupiter's orbit and 8.3 miles per second to get to Saturn's orbit. From Figure 4 we see that we need a mass ratio of 66 for Jupiter and 120 for Saturn. The latter is a little large even for a loosely constructed, low acceleration chemical rocket.

So far, a chemical fuel journey from the space station to Mars seems in the cards, while one to the outer reaches of the solar system seems a mite difficult. Are we, however, perhaps optimistic even about the trip to Mars? Where, we may ask, do we get the fuel? And, where do we get the time?

First of all, after straining whatever must be strained to the utmost to get us and our ship into an orbit around Earth, do we want to cart up seven times its weight in fuel for a trip to Mars, or one hundred twenty times its weight in fuel for a trip to Saturn, even if we could make it? Remember, our ship isn't going to be light. Unlike a trip to or from an orbit 1,075 miles above Earth, a trip to Mars by elliptical grazing orbit takes a long time. It takes somewhere between a half an Earth-year and a half a Mars-year, or roughly nine months. To make a round trip takes more than twice as long — about thirty-two months, in

fact. Earth moves from its initial position during the trip and we have to chase it on the way back. A round trip to Jupiter would take perhaps six years. Even with hydroponics to produce food and air, a ship fitted out for an occupancy measured in years would weigh a good deal, and carting many times its weight in chemical fuel from Earth to space station would be a staggering task.

Here I really believe that atomic power comes to the rescue. Chemically fueled rockets expend power at a prodigious rate—small compared with an atomic explosion, perhaps, but very large compared with any other controlled source of power of equal weight, be it an internal combustion engine or an atomic pile generating electricity by means of a vapor turbine. To overcome gravity and get off Earth and into an orbit we need lots of *power*, that is, a high rate of expenditure of energy. For this, chemically fueled rockets are very good. The weakness of chemical fuels as compared with atomic fuels is that they contain a very limited energy per pound. Once in an orbit about Earth, what we need to get to the planets is not a burst of power, but a large expenditure of energy per pound of ship. It is just this which atomic energy offers us.

In the case of atomic power, I think that it is permissible to neglect the weight of the fuel completely! The weight of our atomic rocket will be

governed almost entirely by the weight of the power plant necessary to produce the required horsepower, together with the weight of supplies and accommodations. The fuel for any trip within the solar system will add negligible weight.

When I first calculated how an atomic rocket might shape up I was very conservative. I said: Suppose we want to get to the orbit of Mars and have a year to do it. Suppose that in the year we allow ourselves enough power so that, disregarding gravity, we could accelerate from a standstill to five miles per second. What can we say about an atomic rocket which would do this? Figure 5 tells the story.

We have one choice to make. We can regard this either as a choice of exhaust velocity or as a choice of mass ratio; as Figure 5 shows, the two are interdependent. The horizontal scale shows exhaust velocity in miles per second. The left-hand vertical scale shows mass ratio as given by the curve that rises to the left. The lower the exhaust velocity, the larger the mass ratio must be. Fine! Let's just make the exhaust velocity high and carry little reaction mass.

Unfortunately there is more to it than that. The curve that rises to the right gives horsepower per pound weight of ship—not counting the reaction mass. The higher the exhaust velocity, the more power we need per pound of ship. What can we do?

There is an exhaust velocity, between three and four miles per second, for which the power required is lowest. However, the mass ratio is unduly high. A compromise seems in order. If we double the power by using an exhaust velocity of fifteen miles per second, the mass ratio is only 1.45; that is, the mass we carry to eject, the reaction mass, weighs only forty-five per cent as much as the empty ship.

How powerful does our atomic motor have to be for this choice of exhaust velocity? We need only 0.02 horsepower per pound. That is, a 40-ton ship requires only 1,600 horsepower, or much less than one airplane engine.

Can we shorten the trip much if we increase the power? We can make a rough estimate by taking the shortest distance from Earth to Mars, about 40 million miles, and computing the time taken to go this far, accelerating half the way and slowing down the other half, neglecting gravity in the computation. I estimate that for a 40-ton atomic ship with the same mass ratio as that previously considered and with 10,000 horsepower the trip would take five months. Calculated on this basis, the time is inversely proportional to the cube root of the power, so that one should have to use 80,000 horsepower to further shorten the trip to two and one half months. Just what we can expect of atomic power plants I do not know, but it

looks as though they would get us to the planets faster than, as well as more economically than, chemical rockets.

I was curious to know what the acceleration would be on a five-month trip to Mars. The average acceleration on such a trip would be about 1/3,000 that of gravity. Aboard our five-month ship a two-hundred-pound man would weigh about an ounce.

What about getting back from Mars? To do this we merely carry enough fuel—of negligible weight—and knock a few tons off Deimos or Phobos to use for reaction mass on our trip Earthwards.

Except for a certain slowness, this begins to look more like space travel as our authors envisage it. We see that it has several elements:

- (1) Transportation of our interplanetary rocket to an orbit about Earth, by means of chemical fuels.
- (2) Carrying a negligible weight of atomic fuel with it.

(3) Carrying less than one half the rocket's weight of reaction mass to eject in pushing the atomic interplanetary ship outward.

(4) A trip to the vicinity of some light satellite, asteroid, or ring (of Saturn).

- (5) Picking up reaction mass.
- (6) A return to an orbit around Earth.

In order to land on and take off from planets of light-gravity and low-es-

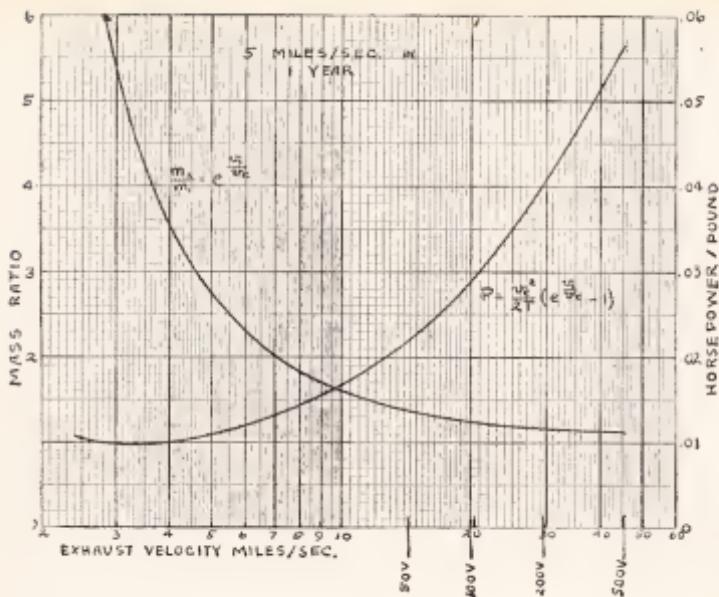


Figure 5: The horsepower per pound of empty ship which our atomic rocket requires to attain a velocity of five miles per second in one year varies with the exhaust velocity. So does the mass ratio, the mass of ship plus fuel,  $m_2$  divided by the mass of the ship,  $m_1$ .

In the equation for power you'd better use meters and seconds, and get the power  $P$  in watts per kilogram. The ship velocity is  $v_s$ , and the exhaust velocity is  $v_e$ .

cape velocity we would have to add:

(7) For larger airless satellites, carrying a small rugged chemical rocket with enough fuel to land and take off.

(8) For Mars or a satellite with an atmosphere, carrying a chemical rocket with wings for landing by means of a braking orbit ending in a glide, and enough fuel to take off again.

This is all very well, but are there insuperable objections to our atomic rocket? I don't mean matters of expense, or engineering difficulties, or subsidiary inventions and developments, but real, fundamental troubles.

The objection that radiation might fry the crew, and that adequate shielding is so heavy as to be inconsistent with space travel, has been nicely disposed of by Dr. Lyman Spitzer, Jr., Director of the Princeton University Observatory. Dr. Spitzer observes that the inverse square law is in force for radiation. Just as sunlight gets dimmer and dimmer as we travel farther away from the sun, so whatever dangerous products the atomic engines give off will be spread more and more thinly as we go away from the engines. Dr. Spitzer proposes

merely to drag the passenger compartment far—many kilometers if need be—behind the atomic engine: a sort of trailer truck, in fact. The cable need not be heavy, for the acceleration is so much less than that of gravity. Of course we would use radio control, both for lightness and to avoid being set permanently adrift in case the cable should break.

The problem of communication I think I have disposed of in "Don't Write, Telegraph," ASF March, 1952. I think that the spaceship could be in touch with Earth all the way to Mars. The low acceleration should make it possible to use an adequately large antenna.

All of this may be rather dodging the issue, however. What we must decide is, can we really use atomic energy in ejecting our reaction mass at the desired velocity?

For our slow trip to Mars, illustrated in Figure 5, we required an exhaust velocity of about 14 miles per second, which is much higher than the 1.74 miles per second of Von Braun's chemical rocket. For the five-month trip we would require a jet velocity of about 50 miles a second. One just can't obtain such velocities by heating matter up in the ordinary way. Chemical fuels produce high temperatures, and at the same time the large mass of fuel used can be run over the walls of the combustion chamber prior to burning in order to

keep the chamber from melting. Atomic piles just don't produce comparably high temperatures, and they provide no way for directly heating gas hotter than the solid structures which might correspond to the walls of the combustion chamber of a chemical rocket. Yet, to take advantage of atomic energy we need exhaust velocities which correspond to temperatures much higher than those obtained by burning chemical fuels.

The only way out seems to be to use atomic energy to produce electric energy, and then to use the electric energy to accelerate the reaction mass.

The usual proposal for accelerating reaction mass in the form of a gas is to ionize it, to accelerate the ions by means of a high voltage, and so to shoot them from the ship. Electrons from a hot filament can be shot out to produce an electric current equal and opposite to the ion current so that the ship won't charge up.

I can assure any naive speculator that this isn't as easy as it sounds. Consider, for instance, the voltage needed to accelerate the ions. At the bottom of Figure 5 voltages, 50V, 100V, 200V, 500V, are marked along the horizontal, miles per second, scale. These are the voltages required to accelerate a singly charged water molecule to the speed indicated. To achieve the chosen 14 miles per second requires about 50 volts. This is embarrassingly low. For the five-month trip to Mars, an exhaust velocity of around 50

miles per second, corresponding to about six hundred volts, is required, and this is a little more encouraging.

At 50 volts, to expend 1,600 horsepower the ion current must be 23,000 amperes. At 600 volts, to expend 10,000 horsepower the ion current must be 12,000 amperes. It is easy to draw large currents at low voltages in a gas tube, but that is just because there are both ions and electrons everywhere, and no large charges build up. Just try to shoot a large current of ions alone out of an ion gun! Any radio experimenter knows that in a high vacuum electron tube, space charge prevents one from drawing large currents of electrons. Ions are much heavier and more sluggish than electrons and the idea of shooting thousands of amperes of pure ions out of an ion gun at a few hundred volts is just plain ridiculous.

I believe that there is a way out, and I have indicated it in the sketch

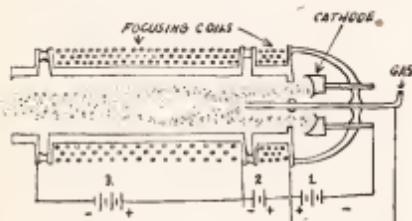


Figure 6: Ion jet number 1. A flow of gas is ionized by an electron beam and the ions are accelerated by a voltage source 3 which slows down the electrons. A voltage source 1 accelerates the electrons. A voltage source 2 keeps the ions from backing up.

of Figure 6. This is supposed to represent a cross section of an axially symmetrical gun. A hot cathode to the right produces a hollow cylindrical beam of electrons. The electrons are accelerated by a large applied voltage represented by Battery 1. The electron beam is held together by a magnetic field produced by focusing coils. Battery 2 slows down the electron stream moving away from the cathode. Because negative electrons are urged toward the cathode by this battery, positive ions moving toward the cathode will be slowed down and forced to go away again.

In order that ions may be produced, a pipe shoots gas into the middle of the electron stream, and as the gas tries to escape, it is ionized. Because ions have a small ratio of charge to mass, the magnetic focusing field is not very effective in confining them, but it does confine the electrons in a narrow stream, and the ions are attracted by the electrons, so the beam of ions and electrons sticks together. At the left end of our ion rocket gun a third voltage applied by Battery 3 accelerates the ions toward the left and slows down the electrons at the same time. If everything is adjusted just right, equal numbers of ions and electrons are shot out to the left, each with the same velocity.

The virtue of this gun is that where the ions are accelerated and shot out their space charge is neutralized by the electrons, and so there is no space

charge to limit the ion flow. The gun has a defect as well, and one which I did not notice until I had sealed the manuscript for this article in an envelope for the first time. (Have you been more astute in detecting the difficulty than I was?) The defect is that I completely forgot about the electrons which are produced when the gas is ionized! These will be drawn back toward the electrode connected to the positive pole of Battery 2. If the annular opening between this electrode and the pipe admitting the gas is made small enough and if the electron beam from the cathode is well focused, it may be possible to collect the electrons produced by the ionization of the gas while letting the electrons from the cathode whiz by. This would, of course, entail a certain waste.

I am sure that other problems will arise in connection with any effort to use electric power in producing rocket thrust, and just to be on the safe side I thought up a scheme quite different in principle; it is illustrated in Figure 7. Here an electric discharge through the gas in a small almost-closed chamber produces a *plasma*, that is, a mixture of ions and electrons in equal numbers. The plasma is allowed to leak out through a small hole to the left and the gas is replenished by a small flow in from the right.

After the plasma leaks out, it is confined by a magnetic field so as to form a narrow beam. As the electrons

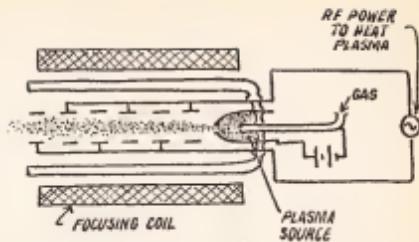


Figure 7: Ion jet number 2. Gas ionized by an electric discharge passes between tubular electrodes excited by radio frequency and is heated out of contact with surrounding materials.

and ions of the plasma move to the left, they are set in relative motion by a radio-frequency field applied between a series of tubular electrodes surrounding the beam. This radio-frequency heating raises the plasma to a temperature far higher than that of its surroundings. The heated plasma pushes outward against the magnetic field. It pushes backward against the gas source. It is pushed out to the left and so we have our rocket motor with an extremely high temperature and an extremely high exhaust velocity.

No doubt both of these proposals have defects. Energy is lost in ionizing the gas in either. This reappears as light in the exhaust. In the case of the radio-frequency heating, a good deal of energy may be lost by multiply ionizing the gas. But I still feel that all indications are that, once they have got free of Earth by means of chemical rockets, men will ride to the planets on atomic jets.

THE END

# WITHOUT PORTFOLIO

by James E. Gunn

*All Right, so it does seem cockeyed! But—why not?*

Illustrated by van Dongen

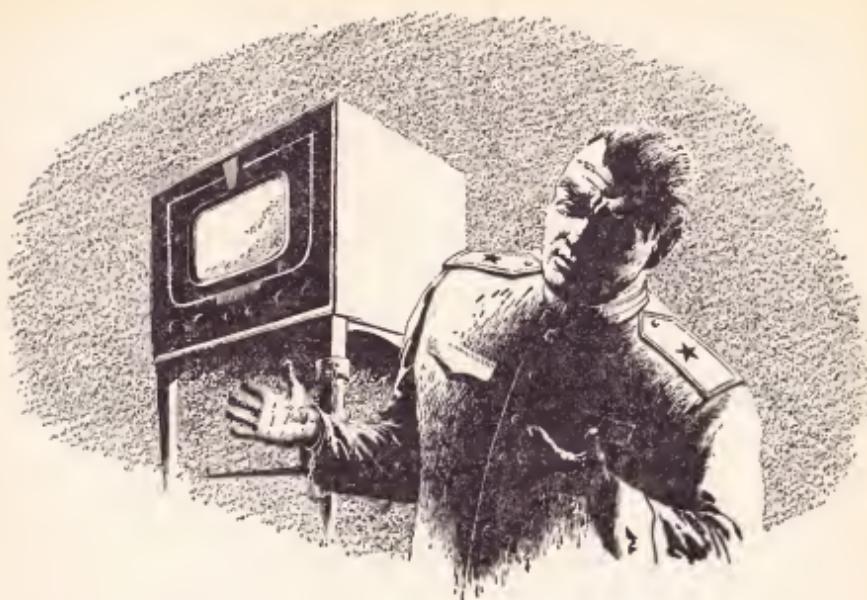
"Ready?" the Secretary asked. He pushed his chair back from the wide, polished darkness of the desk and stood up.

In his sixties, he was still tall and broad-shouldered and straight, and he carried his beautifully modeled head proudly. To *TIME*, he was good and gray, as Cordell Hull had once been. But it wasn't dignity or honor or the pride of integrity that peeked out of the dark, deep-set eyes under the thick, white eyebrows. It was fear.

"Ready," Stephen Judy said calmly and picked up his brief case and followed the Secretary's gray back through the doorway and down the long hall and out into the green and the blue and the brightness.

As they came out of the side door, grim-faced men formed a protective circle around them. The helicopter, that had been hanging above, dropped lower. They started along the broad, white walk that bisected the cropped lawn and walked quickly toward the domed Capitol. Around it, the anti-missile radar installations searched restlessly for targets, and the obedient guns raked stiff, taloned fingers across the sky, as if the tender Earth, in final rebellion, had grown hands to tear its tormentors from above.

Judy was undistinguished. Everything about him was medium, from his height and weight to his brown hair and eyes. Even his age fell somewhere between the young and the old. His



face was firm but not hard. He had thickened noticeably around the middle. He seemed successful in an unspectacular way, a small businessman say, an executive in a larger business, a lawyer—civil, not criminal—a lobbyist.

There is a quality of ruthlessness that clings to ambitious men long after they have reached their goals; that Judy seemed to lack.

In a sense he was what he seemed to be, and the brief case was his professional badge.

As they approached the long, high steps, the Secretary slowed and turned toward Judy. "Have you got the . . . the documents?" he asked. His voice trembled just a little.

"Right here," Judy said, patting the brief case.

Just before the Secretary stepped into the shadow of the Capitol, he glanced once toward the unspecked blueness above. There the artificial satellites raced unseen, but they were neutral like the stars, and death might lurk there. But no one would know until knowledge was futile. And so the glance was folly, and he knew it.

Death is invisible.

Judy smiled as if he could read the Secretary's thoughts. He pointed up where the Secretary had been looking. "The fate of the world isn't up there—but there!" And he pointed toward the great doors that waited for them in front.

Excerpts from a recorded session of the United States Senate standing committee on Foreign Relations, August 20, 1975, Senator Mullins presiding:

Chairman: Mr. Judy . . .

Judy: Call me Stephen—or Steve, if you like . . .

Chairman: Before we start, Mr. Judy, I'd like to ask whether you have any objections to this meeting of the committee in secret session.

Judy: No, sir. But then I wouldn't object to a public meeting, either . . .

Senator Peterson: With this country expecting attack at any moment, and you think the meetings of the Foreign Relations committee should be open to the public—which includes foreign agents?

Judy: You might as well. It will leak out anyhow. But I suppose it depends on your philosophy . . .

Chairman: The session will proceed much faster if the witness confines himself to simply answering the questions.

Secretary: I'd like to remind this committee that Mr. Judy is appearing here of his own free will. He has not been subpoenaed, and he is not required by law to appear before you, as I am.

Chairman: That, Mr. Secretary, is the crux of the matter, and I suggest we get down to it as soon as possible so that we can get to the bomb shelters.

You are, Mr. Judy, an employee of the government?

Judy: No, sir. My firm has been hired by the government to perform certain duties . . .

Chairman: And how would you describe those duties?

Judy: Well, I suppose it could be called the handling of foreign relations . . .

(Uproar. After several minutes, the chairman succeeded in quieting the committee, and the session continued.)

Chairman: The present crisis—it would be due to your performance of those duties. Is that correct?

Judy: I suppose . . .

Chairman: Because the government abdicated its diplomatic function. . . ?

Judy: That's hard to . . .

Chairman: Suppose you start at the beginning, Mr. Judy, and tell us—explain to us so that we can understand—how the United States, without committing a single official act, can find itself facing all-out war—can wonder whether missiles with hydrogen-bomb warheads are plunging down toward it.

Judy: (removing several sheafs of paper from his brief case) Here are files—one for each member of the committee—of documents excerpted and duplicated. The first one, you will notice, is a copy of a letter to the Eurasian Ambassador:

COOK & JUDY  
DIPLOMATIC SERVICES  
"Extraterritorial claims a specialty"  
March 26, 1975

Mr. Josef Petrovsky, Ambassador  
Eurasian Union  
Eurasian Embassy  
179. . . .

Dear Sir:

This will inform you and your government that we are, as of this date, the appointed diplomatic representative of the United States of America. All further correspondence should be directed to us.

We are in the process of reviewing the State Department files in preparation for putting these affairs on a businesslike basis, converting treaties into contracts, and so forth. If you have anything to discuss with us in pursuance of this matter, we will be glad to have our representative call on you or arrange a meeting at your convenience.

We are especially anxious to clean up the German situation so that we can get on to more important matters. Perhaps we can get together soon for lunch?

Sincerely yours,  
Stephen Judy

Chairman: Don't you consider this unusual, Mr. Judy—I might even say unprecedented—for a business firm to assume responsibility for a nation's foreign relations?

Judy: For a nation this size? Un-  
WITHOUT PORTFOLIO

usual? Yes. Unprecedented? No. There are precedents aplenty, ever since the formation, in the early Fifties, of the partnership between Ernest Gross and Louis Hyde, Jr. I might even say that this development was inevitable. It has been obvious for many years that the conduct of foreign relations has outgrown the capabilities of amateurs—even such gifted amateurs as our present Secretary of State. It is long past time for the professional to take over, as he has done in many countries, including the Eurasian Union. The difference here—and the blessing, too, as I hope to prove—was that the American institution best suited to accept and carry out this function was the business firm.

(Mr. Judy slipped a small object out of his brief case. This caused considerable consternation before it was recognized as a miniature projector. When he focused the picture on the wall, it revealed two men. They were in an office. One of the men was immediately identified as Josef Petrovsky, the Eurasian Ambassador.)

Petrovsky stared down at the sheet of paper in his hand, frowning so darkly that his heavy black eyebrows met in a single line. He sneered, started to crumple the sheet, changed his mind, smoothed it out, and tossed it aside. It fluttered to the wide expanse of polished desk top.

"So," he rumbled heavily. "What

does it mean, Ivor?"

"I suggest, ambassador," Ivor submitted cautiously, "that it is a trick."

Petrovsky tugged at his chin, sneering. "A trick? Perhaps. But I do not think so. I think it is a sign of weakness. We will ignore it. They will get weaker and more desperate."

Chairman: Do you expect us to believe that this was an actual recording of a conversation in the office of the Eurasian ambassador? Even a child would be aware of the impossibility of that, not to mention the fact that they are speaking English . . .

Judy: Impossible as you consider it, that was the Eurasian ambassador and his personal secretary, Ivor Rilikov, not actors. English translations were dubbed in as a matter of standard operating procedure. The originals are, of course, on file. S.O.P., too, was to plant numerous small devices in the offices and homes of the men we expected to deal with. You wouldn't expect a business firm to work properly without a knowledge of its competitors' intentions . . .

Chairman: All right. Go on.

Judy: The next few items in the file are diplomatic notes from the Eurasian Embassy to the State Department. We acknowledged these in a general letter with the observation that they had been turned over to us for action, and we would be glad to discuss them at the ambassador's convenience, preferably over lunch or

dinner, there being a new and rather delightful floor show in town . . .

Senator Peterson: Do you consider this in keeping with the dignity of the United States. . . ?

Judy: One of the advantages of the conduct of foreign relations by independent contractors is the decline in importance of dignity, formality, honor . . . The vital thing is results. Fortunately, though, Petrovsky felt the same way about it as you. He was goaded into answering us. His reply was short, brusque, and protocolic . . .

Chairman: Protocolic?

Judy: Sorry. An office term. We gave him a pain in his protocol.

Chairman: And while you were playing these little games, the German situation was drawing us closer to war . . .

Judy: True. But that's the privilege of the professional. Things assume their proper proportion, including games, as you say. It was vital not to appear eager, you see. I think you will get a better picture of what we were trying to do if you imagine us as two business firms interested in coming to agreement over a potential market, neither one knowing the exact extent of the other's resources, how much it is willing to gamble on this venture, or how much it knows of the other's intentions. It is, if you like, a game situation. As such, it is covered by the Theory of Games, and our computer section

gave us all the information on odds and probabilities we could use. And we were aware, too, that Eurasia, in spite of Petrovsky's attitude, wasn't ready to act until our position and capabilities had been explored.

Senator Peterson: You were just trying to keep Eurasia guessing.

Judy: Of course. Always. But that wasn't our primary goal. We had to get Eurasia in a mood to bargain, to meet us at least halfway. That, as a matter of fact, turned out to be the Rocket Club.

Senator Peterson: As a place for conducting State business, that has, at least, the virtue of novelty.

Judy: For State business, perhaps. But not for business. More deals have been consummated over night club tables than over office desks. The atmosphere urges agreement, and alcohol and the female body divine speak all languages. Petrovsky had condescended to exchange a few letters with us muddying Eurasia's position on the German situation and ignoring our requests that Eurasia live up to its contractual obligations. He agreed to the meeting place, because he had just discovered one of our recorders in his office. I give you—Petrovsky in the Rocket Club. We were speaking French, incidentally, and the recorder was in the table decoration . . .

Against a mottled background of spotlights and darkness, white flesh

and whiter shirt fronts, loud music and louder voices, Petrovsky, clothed in a conservative, diplomatic pinstripe, cautiously approached the table.

Judy jumped up to grab the Eurasian ambassador's hand and pump it enthusiastically. "It's a pleasure to meet you at last, sir, and I'm sure we can reach a quick settlement of our mutual problems. But first, shall we eat. . . ?"

"Never mind," Petrovsky grumbled. "I've already eaten. Let's get on with the business . . ."

"You won't mind then," Judy broke in blandly, "if I order?"

The film flickered as it changed to a scene of Judy lifting a dripping bite of steak toward his mouth and saying, "How about another drink? Don't hesitate. All this goes on the expense account."

Petrovsky glanced once more out of the corner of his eye at the stripper carved in half by the lights and said heavily, "I find these proceedings exceedingly undignified, and I would appreciate your saying what you have to say so that I may leave. This whole matter has been handled with absurd informality, and I shall so report it to my government."

"Dignity?" Judy said. "Formality? What are they worth on the free market? Come now, we're reasonable men. We can sit down and work these matters out together. Take the German situation, for instance . . ."



Petrovsky straightened up; his eyes sharpened like little black pins. "Yes. Go on."

"It's a simple matter of contract which any court could dispose of within minutes—"

"Simple matter?" Petrovsky exclaimed. He was frowning as his hand came down heavily on the table. "This question of freedom and democracy? And what is this about court and contract? We have neither of these things."

"Treaty, then, if you prefer the word. We hope, though, to regularize them into contract form as soon as possible. As for the court, of course we don't have any. But we must act as if we had, eh?"

"Absurd!" Petrovsky drew back as if he were across the table from a madman. "Act as if we had a court! The foreign relations of the Eurasian Union have always been conducted realistically."

"But how else can we discover the right thing to do?" Judy asked in bewilderment. "Self-interest is anarchy; don't you agree?"

"Of course not," Petrovsky growled, his head turning to watch the gleam of white flesh. "There is no law where there is no method of enforcing it. There is merely agreement, and agreement is dependent on the continuation of the original state of affairs."

Judy shook his head gently, as if he were tutoring a pupil. "That is obviously, demonstrably unworkable. It

leads to war as the only punishment. That's like a man taking the law into his own hands, and it punishes him, even if he wins, as much as the criminal. Society could never survive that, and the society of nations has crumbled before it time after time."

"So?" Petrovsky asked, shrugging massive shoulders.

"So, until the establishment, through the United Nations, or some such agency, of international law and effective international sanctions by which international criminals can be punished, we must act as if that law and those sanctions exist."

"Fantasy!" Petrovsky sneered. "That situation will never arrive. It would mean a surrender of national sovereignty—"

"Just as the establishment of society and laws and policemen was a surrender of individual sovereignty," Judy agreed. "But it made it possible for men to live together. It is the price we pay for peace. I am a man, Mr. Petrovsky, not a wild animal; I restrict myself and I allow myself to be restricted. I am also a businessman, and I conduct my business within the boundaries laid down by law."

"But there is no law," Petrovsky insisted, and this time there was a puzzled frown on his face. "We must be realistic."

Judy shrugged helplessly. "That's just the point I'm trying to make. You speak of 'realism,' 'freedom,' and 'democracy.' To you they mean one

thing; to me they mean another. A contract would define the terms; a court would enforce them. You are realistic, you say? Nonsense. You live by a set of ancient fictions."

"I?" Petrovsky's face flushed.

"You subscribe—like all other diplomats—to the three basic principles of international law: the recognition of the existence and integrity of other states, of their independence, and of their equality. The last two are obvious fictions. Nations are no more independent than people are. And they aren't equal, except perhaps before the law that you refuse to recognize."

Petrovsky sneered. "When I speak of reality, I mean the reality of divisions."

"There, you see?" Judy sighed. "We disagree already. But this isn't solving the German situation. You have your 'real' divisions massed on the border in breach of the contract—I beg your pardon—treaty."

"When freedom and democratic government are endangered," Petrovsky said piously, "the Eurasian government is always ready to defend them."

"In other words, if the East Germans choose to join the West Germans in the coming plebescite, the Eurasian armies will roll in—"

"Such a choice," Petrovsky said blandly, "would be proof, *per se*, of fascist intervention, falsification of ballots, miscount, fraud—"

"Your government, then," Judy said calmly, "won't recognize any result except in your favor?"

"Exactly."

"In spite of the treaty?"

"We must agree with Bismarck—treaties are only valid so long as they are reinforced by the interests of the parties to them."

"You're going to risk war on this issue?" Judy asked.

Petrovsky shrugged. "What risk is there? You won't go to war over such a minor matter."

"That," Judy said grimly, "is where you are wrong . . ."

Chairman: So. We can discard the night club approach.

Judy: Well, it made Petrovsky say more than he intended. He outlined his government's position very well. Unfortunately, my implied threat wasn't effective. As soon as this became obvious, we started Plan No. 5.

Senator Peterson: What was that?

Judy: We declared war—

(Mr. Judy was interrupted by an uproar which took several minutes to quiet.)

Chairman: On the basis of what we have already heard, it is my opinion that no time should be lost in setting impeachment proceedings underway against the Secretary of State and whoever else is responsible for placing the conduct of foreign relations in the hands of this . . . this traitor! And

there must be some charges we can press against the witness himself . . .

Judy: This is another proof of the superiority of business methods over political methods. The Secretary must act as if one hundred election-conscious senators were peering over his shoulder, knives in hand. Naturally, he sticks to precedent. My firm, on the other hand, can concentrate on the most effective measures and the desired results . . .

Senator Peterson: There has been no constitutional amendment, I believe, eliminating the right of the Senate to approve treaties and the right of Congress to declare war . . .

(Applause.)

Judy: There have been no treaties signed, and when I speak of war, I mean, of course, a businessman's war—a commercial war . . .

Chairman: It's unfortunate that Eurasia doesn't mean the same thing.

(Laughter.)

Judy: That's true. It is unfortunate. Our job is to make Eurasia realize that. We must act, you see, as if there were laws and other nations abided by them. When they do not, we must protect ourselves; we must make other nations law-abiding . . .

Chairman: You did not quail before the task. . . ?

Judy: No, sir. How vital it was has been demonstrated in the last few

hours and the last few minutes. Upon it depended the future of our firm, of the administration that had faith in us, of the continued existence of the United States of America, and of the world's chances for real international law.

Senator Peterson: You realized, of course, that we were not prepared to go to war over the German question?

Judy: Certainly. But in the face of inevitable war, it is better to stand firm rather than let the borders and determination of the free world be nibbled away . . .

Secretary: Yesterday the German plebescite was held under U.N. auspices . . .

Chairman: The Secretary will please refrain from comment. If he will be patient, he will get his turn upon the stand . . .

Judy: The results, which will be announced shortly but are already generally known, are an overwhelming victory for the free world.

Secretary: The vote was, to a large measure, the direct result of the efforts and methods of Steve's firm in presenting the question to the voters . . .

Senator Peterson: If it is the occasion for the marching of the Eurasian divisions and the outbreak of atomic war, I should think Mr. Judy's efforts might better have been spent in persuading the East Germans to vote the other way.

Judy: We can't surrender to black-

mail. That would make us criminals. Besides, we were prepared . . .

Chairman: Prepared? How? Have you taken over the command of the Armed Forces, too?

Judy: Oh, no. Nothing like that. We had been preparing for some time. Plan No. 5.

Chairman: War?

Judy: Right. In preparation, we had sold several million cheap, sturdy TV sets to the Eurasian government. As we expected, they were distributed immediately. The hunger of the Eurasian masses for consumer goods is perpetually unsatisfied. After that our methods were the tested methods of persuasion, proven in the fire of more than a century of commercial competition.

Senator Peterson: It seems to me that this hearing might well adjourn to the bomb shelter . . .

Judy: That won't be necessary. I'm almost finished. In the month before the plebescite, our campaign went into full swing. Under the guise of vast distress sales, we undersold Eurasia on the world market, as you'll notice in the file . . .

#### GIANT PRE-WAR SALE!

Soft Goods      Hard Goods

Grain—Butter—Cheese—Dried Milk  
Metals

#### WE NEED THE MONEY

10% off for Cash and Carry

YOU NAME THE TERMS

WE'LL TRADE YOUR WAY

Chairman: You were selling these things when they would be the very things we would need in the event of war! . . .

Judy: In the event of the kind of war the sales were designed to prevent, the things we sold would have been worthless. Actually, we made some very profitable sales and got rid of some embarrassing surpluses . . .

Senator Peterson: Now we have the real reason for your interest in foreign relations: profit!

Judy: Of course. That's business. Call us profiteers, if you like, but add "of peace." If more people could profit by peace, there'd be no war. But let me go on—time is growing short. We spread rumors about our competitor—I mean Eurasia, of course. Their goods were shoddy, we said; their methods were disreputable—all perfectly true. Eurasia's trade with the world was cut off cleanly. She had come to depend on it more than she realized.

Chairman: And that was another incentive to war.

Judy: Oh, no. Eurasia couldn't hope to re-establish trade by war. That would only result in conquest and destruction. Finally we bought time on the Worldwide TV Network.

Senator Peterson: You mean the artificial satellites thing that the U.N. neutralized?

Judy: Precisely. We bought advertising time, and the TV sets sold to Eurasia came into use. A hidden relay

turned them on, and they picked up the program from the satellite racing overhead. Advertising is, of course, only a method of shaping convictions. We bought listeners with irresistible entertainment and advertised—consumer goods. Within a few days, the sets had all been smashed by government agents, but their work was done. Seven hundred million Eurasians were convinced that our products were the best available, that they could get them only from us, and they wanted them with a great and overwhelming hunger.

Chairman: And that, I suppose, wasn't a reason for war?

Judy: Only a madman would think that. We broadcast no propaganda. We did nothing that Eurasia could not do, freely and legally. We did what any salesman would do: we advertised what we had for sale. Of course, we were prepared for the fact that we might be dealing with madmen.

Senator Peterson: How do you mean?

Judy: On the eve of the plebescite, by stratospheric rocket, we showered leaflets throughout Eurasia but especially over the border areas and troop concentrations.

Chairman: Leaflets have never won a war.

Judy: Until now. You'll find a translation in the file in front of you . . . \$50

This coupon is good for

\$50 FIFTY DOLLARS \$50

in trade	
at the nearest port of entry	
on any REFRIGERATOR,	
RANGE, TV SET,	
AUTOMOBILE or HELI	
(Void if not redeemed	
within one month)	
\$50	\$50

Chairman: This is unprecedented folly!

Judy: Folly? That depends on results, and the results are not yet in. But not unprecedented. Let me cite Radio Free Europe and other civilian activities . . .

(The senators stared at Mr. Judy as he cocked his head and stared at the ceiling as if he were listening to voices.)

Judy: It's a great pleasure to inform you that Petrovsky is frantic for a meeting . . .

Senator Peterson: What does that mean?

Judy: It means that Eurasia has surrendered. Good thing, too. A few hours more and the government would have toppled.

Chairman: Would you tell us how you learned this?

Judy: A receiver, Mr. Chairman, imbedded in my mastoid.

Senator Peterson: What do you intend to do?

Judy: Why we'll sign a contract

with Eurasia, of course. It should be very profitable, even after redeeming the coupons. I think that law and the conduct of foreign relations in a businesslike way have won striking victories. The technique was simple: arouse desires which only peace can satisfy.

Chairman: Wait a minute! Why not let the Eurasian government fall?

Judy: But that would be instigating revolution! Very illegal. Besides, I doubt if this country wants the responsibility of caring for seven hundred million Eurasians.

(The committee members whispered for a moment or two among themselves.)

Chairman: It is the decision of this committee not to press charges against the witness or the Secretary of State.

Judy: Very wise, too, since a recording of this session is now in my office, transmitted there by a little device in my brief case . . .

Outside the Capitol a few minutes later, in the green and the blue and the brightness, the restless radar saucers slowly came to a stop. The antimissile guns froze. They no longer looked alive; they were like something stiff and old and useless.

But the sun beamed down very warmly.

THE END



# NOTHING NEW

BY ERIC FRANK RUSSELL

*Concerning a man who kept a promise  
he didn't imagine had ever been made!*

Illustrated by Frees

The ship fled through sparkling darkness. There were orbs of flame and whorls of light and glittering spirals that told of multimillion suns and hidden planets stretching onward, ever onward through infinity. And through these streaked the ship, a superfast mote less in the vastness than a bulleting speck of dust, a speck that none the less bore its full quota of life.

At such pace went the vessel that

nearer stars in its line of flight appeared gradually to drift apart hour by hour rather than month by month. It was a mote with a new power undreamed-of in long bygone days when one dead satellite had been claimed with a triumphant shout. A mote whose years were less than days and whose space-reach was enormously long.

The man in its nose was not amazed

by the near-visible phenomenon of star-drift. It was a normal feature of his day and age, an accepted marvel often depicted on the telereceivers of stodgy stay-at-homes.

Olaf Redfern, the pilot, sat at his controls and gazed into the shining heavens with the calm, phlegmatic air of one to whom is given the task of finding very small pinheads in very large haystacks. With the aid of charts, instruments, calculating machines the size of cigarette packs, the abilities of Navigator Paul Gildea and the luck of a Terran garnet in his finger ring, he had done it fifty times in the past, was confident of doing it a hundred times in the future.

Readjusting the controls which were complicated enough to make a major chore of creating a minor shift in flight-angle, he locked them on the fractionally altered course, remained staring broodingly into expanding space. In short time Simkin, the archaeologist, joined him, took the adjacent seat and studied the view.

"Someone once said," he remarked, "that it is better to travel than to arrive. I don't agree. One can become tired of living one jump ahead of a low-pitched whistle while a multitude of candles float around in the night."

"That's because you have little to do before you get there," Redfern offered. "Try piloting for a change. You'll find it more interesting."

"I'm too old to start afresh, too much in love with my chosen field."

He threw Redfern an apologetic smile. "The kick you get out of finding and landing upon a new world is no greater than the kick I get out of digging up an ancient artifact whole and unscratched."

"Frankly, I don't see the fascination of your job," said Redfern. "It's rooted in the far past which is finished and done with, whereas mine probes the future into which we're moving every minute. The future is controllable within limits. You can't do a darned thing about the past."

"I agree. Nevertheless, we have our surprises and our triumphs. After all, it was a bunch of hole-diggers who proved conclusively that highly intelligent life once existed on those twin worlds near Arcturus."

"But they're still dead worlds to me," Redfern commented.

"Maybe so. They're digging deeper, all the same. They want to know why life departed. Did it die out and, if so, of what cause? Or did it depart elsewhere and, if so, by what means and whence? Answers to those questions may tell us things well worth knowing. We're never too big to learn."

"There's that about it," Redfern conceded.

Falderson, the mass-sociologist, lumbered into the room, flopped on a seat. He was a paunchy man with a nervous twitch in his left eyebrow. The said twitch often served to fascinate alien life forms while under cross-

examination.

"We should land in about fourteen hours' time, according to Gildea's latest estimate," he announced. "And I hope to goodness they won't prove to be a gang of howling barbarians who'll throw things at us on sight. I hate to admit it but this incarceration has loaded me with too much fat for primitive battles."

"You'll lose the grease," promised Redfern. "It'll all boil out in the cooking pot."

"I can't imagine immortals being unlettered savages," Simkin opined.

"Immortals?" Redfern eyed him incredulously. "What are you talking about?"

Simkin registered equal surprise. "Didn't you know that the planet we're seeking is rumored to be populated by immortals?"

"First I've heard of it. I get flight-instructions, same as Gildea. We lug loads of experts hither and yon, seldom know or ask the reason why." He frowned to himself, added, "I just can't believe that anyone has discovered the secret of eternal life. I take that idea with a heavy cargo of salt."

"So do we," Simkin gave back. "But legends often prove to be grossly distorted versions of original truths. Our present purpose is to determine the degree of distortion by discovering how much truth existed and, with luck, still exists."

"Where do legends come into this?"

"You tell him — it's your pet sub-

ject," Simkin suggested to Falderson.

The mass-sociologist said, "You've heard of the Alpedes, that seven-planet group beyond Rigel?"

"I ought to. I've been there twice. Come to that, we're not so far from them right now."

"Then you'll know that all are populated by intelligent life forms more or less civilized but not sufficiently advanced to be capable of constructing even an antiquated rocketship. Therefore, they can have had no contact with each other until Terrans arrived two centuries back and set up a small inter-system mail service."

"Yes, a friend of mine is piloting for that outfit."

"Well," continued Falderson heavily, "what with political, strategical and commercial considerations coming first — not to mention the strong pull of other more urgent interests in a thousand other directions — it was quite a piece before anyone got down to serious study of the seven-fold Alpedian cultural mores. A certain Professor Wade eventually buried himself in that task and after a couple of years came up with a hair-raiser."

"I view that as an understatement," put in Simkin.

Taking no notice, Falderson continued, "All seven planets had recorded histories available for study. And before the histories all seven had the usual mess of legend. Naturally, since they lacked contact the histories and legends had nothing in common other

than minor items explainable by fortuitous circumstance. But there was one most remarkable exception: all seven planets nursed a fairy tale about a world of immortals."

"But that suggests contact of some sort," Redfern objected.

"Precisely! Nevertheless their histories make no mention of it. Therefore, if ever contact was made it was by proxy, it was done by others exactly as it is today. It was done in the far past before history began to be written and in the misty days when legends were born. The logical guess is that they were visited by these immortals and now remember little more than their most striking attribute, namely, immortality."

"Hm-m-m!" mused Redfern. "Twice can be coincidence, three times can be coincidence, but seven times needs explaining."

"That's what Professor Wade thought. He dug deep into seven mythologies, came up with a couple more items. First, the immortals had never visited the Alpedes themselves. That plays hob with our logical guess and the only alternative we can think up is that the yarn originated with some third party, some other visitors from space who picked it up and passed it along. Second, all seven legends agreed that the immortals lived on a very big world while four versions asserted that this world is the only planet of a blue sun."

"So —?"

"So Wade shot his findings back to Terra without delay. The cosmographologists and other bigbrains were immediately interested, seeing that several times we've extracted from new finds information that has led us straight to others."

"Thanks in part to archaeology," Simkin put in, nudging the listener.

"The Rigel sector is only a quarter explored to date," Falderson went on. "All the same, we've got some pretty good spectra charts of that locality. Analysis of them revealed a definite blue-type sun not a devil of a long way from the Alpedes group. Astrophysicists agreed that it's by far the likeliest primary in the whole area and calculated that it could have one large planet of rather low mass."

"And that's where we're making for right now?" said Redfern.

"Yes, my boy." Falderson stood up, ruefully patted his paunch. "If we're lucky enough to lay our hands on the secret of life eternal, you may be roaming the spaceways forever and ever, amen. As for me, I'll have to get rid of this meaty front before it holds me flat on my face."

He departed, leaving them to their thoughts while the ship sped on and the starfield widened. After a bit Simkin spoke.

"Well, do you now see the fascination of probing the past?"

"Yes, I think I do," Redfern admitted.

"It holds good for any one world without ever seeing another," assured Simkin. "Take Terra, for example. We know more about our own planet than any in Creation. Yet there's an appalling amount we don't know."

"Such as?"

"Terra's most widespread and well-established legend is that of the Great Flood. Without doubt it has real basis. Something happened to the planet, something of catastrophic proportions. It knocked humanity an unknown distance down the ladder — from what height?"

"We couldn't have dropped far," Redfern opined. "Before the Flood we were scratching in trees."

"If ever we scratched in trees, which is highly debatable, it was umpteen millennia before the Flood. How far have we climbed in our present recorded history which covers no more than a fragment of time? So where were we and what were we doing when the oceans roared over the land and brought us to near-extinction?"

"Darned if I know. It's sheer guess-work."

"Olaf, maybe we've been around longer than we think," said Simkin seriously. "And for that reason I'd give my right hand to achieve the impossible."

"Meaning what?"

"I'd give it for a good long look at whatever may be lying whole and undamaged beneath hundreds of fathoms of salt water and great layers of ooze.

I'd give it to see what, if anything, was in existence before the valleys were raised and the hills made low, before small, hungry, bewildered bands of semisavage survivors roamed the water-wrecked land."

"Well," commented Redfern, grinning, "it would be nice to see your face if you dug out of the slime a ship twice as good as this one."

"And it would be equally nice to see yours," answered Simkin, "when you realized that we have not yet regained the heights from which we fell."

Redfern let that pass without argument. He was a pilot, eminently a practical man trained to cope with immediate problems and not much given to long-term speculation.

The astrophysicists proved one hundred per cent correct. The blue sun had one large planet of relatively low mass. It was not gaseous, it was not liquid. Thick vegetation covered its surface of loamy earth in which lurked sparse deposits of light metals, none whatever of heavy ones.

Everything favored a landing. Tests proved the primary's radiations to be innocuous so far as humankind was concerned. The atmosphere was on the thin side but had adequate oxygen content. Finally, the world most obviously was inhabited.

One low-altitude circumnavigation revealed much about its dominant life form before a specimen had been encountered. Intelligence and vegetari-

anism were outstanding characteristics of the planetary scene. Sprawling towns of size and substance showed the former; great cultivated areas devoid of herds evidenced the latter.

Lying awkwardly in the nose and peering down, Falderson said after a while, "Wholly agrarian. Note the lack of heavy industry. And the cities are small from the population viewpoint. They look big merely because of their lavish spread. Every house has a two-acre garden or bigger."

"Fat lot of traffic either," remarked Gildea. "No railroads, no airplanes, no crowded auto-tracks."

"Even if you have the brains to theorize locomotives, planes and autos, you cannot do a thing about them if there is complete lack of natural resources," said Falderson. "It's a safe bet that this crowd has never boosted into space and never will. They're Earthbound because the stuff isn't there. Hm-m-m! It's going to be mighty interesting to see how many social problems have been created and how many solved by sheer lack of what most inhabitable planets have got."

"Take her down, Olaf," ordered Gildea, pointing. "Plant her by that city near the river. The place looks as important as any we've seen."

"I'll go wake Taylor," said Simkin, hurrying out.

Entering the mid-cabin he roused the linguist from his drug-induced slumber. Taylor, a chronic sufferer from space-migrain, emerged from un-

consciousness, sat up, felt himself, blinked blearily.

"Mean to say we're there already?"

"We are. Your time-sense is cock-eyed with sleep. Get busy sharpening your wits because you'll have to pick up new words, gestures, smoke-signals or whatever mighty fast."

"I'll manage. That's my job, isn't it?" Taylor yawned, stretched his arms, relaxed again and sighed deeply. "Let's hope this isn't another Comina. It took me eight weeks to pick up that jaw-cracking speech and then I still limped at it. One soft, wet tongue can't reproduce the rhythmic smacking of horn-tipped palps."

He reeled sidewise on his bunk and the room tilted. Simkin staggered, snatched a handgrip on the wall and hung on. They stayed that way until the ship leveled again and slowed with grinding noises on its belly-skids. It stopped.

"Thank the Lord," said Taylor, fervently. "Solid earth at last."

Leaving him, Simkin hastened to the nose. Falderson, Gildea and Redfern were there staring silently through the armorglass. An approaching native was the object of their united attention.

The oncomer had emerged from the nearest house which was long, low and built of ornamentally carved stone blocks. He was making along his garden path toward the ship. His thoroughly alien appearance was nothing

startling to space-sophisticated eyes long accustomed to forms far more bizarre. The surprising thing about him was his manner.

He made for the ship without awe, alarm, curiosity or any other visible symptom usually accompanying first meetings on newfound worlds. On the contrary, he had only the stolidly helpful air of a rural farmer about to see whether a stalled motorist needed hauling out of a hole.

If assistance was in his mind, it would be a long time acoming because the best pace he could muster approximated to a crawl. He was a biped a fraction under man-height but wide and bulky. Two brilliant yellow eyes shone deep amid the lavish wrinkles covering his gray-skinned face. He wore neat clothing from which protruded a pair of columnar, flexible legs as gray and wrinkled as his face. The legs terminated in feet-pads resembling those of an elephant.

"Superficially humanoid," decided Falderson. "Notice his hands, just like mine only longer and narrower. But I'll bet that basically he's reptilian. A lizard-type that learned to walk on its hind legs and battle the environment with its brains and forepaws."

"He hasn't got a tail," Redfern objected.

"Neither have you — today," Gildea pointed out.

"He makes me think of someone I read about once," mused Simkin. He racked his brains for the memory,

found it. "An ancient character named Chief Taumoto or something similar. He was revered in the Tonga Islands for a couple of centuries. Geratologists took a great interest in him because he was Terra's oldest living creature."

"How old?" asked Redfern.

"Nobody knew for certain. He'd gone well past two hundred when he died. He was a giant turtle holding a chieftain's rank."

"This fellow has a turtle's neck if ever I saw one," Redfern endorsed, continuing to watch the visitor's laborious progress. "And the mad velocity to go with it."

"Where's Taylor?" inquired Falderson. "Open the trap and drop the ladder, Olaf. If we don't go to meet this character, we'll sit here most of a month before he arrives."

Scrambling down the metal rungs they made toward the native. Seeing this, he promptly conserved energy by halting and waiting for them. Close up he looked decidedly less humanlike. The two parties stood and examined each other, the Terrans' attitude being one of frank and friendly interest while the gray-skinned one showed no more than patient submission to it.

Pointing to his own mouth, Taylor voiced a few random words with careful pronunciation and on a rising note of inquiry. The other responded with three or four liquid syllables spoken in little more than a whisper.

"Well, they communicate vocally," said Taylor with satisfaction. "And I

can pick it up without rupturing my epiglottis. Give me two or three days and I'll have enough of the local lingo to get us by."

Listening to this without change of expression the native waited until he had finished, then made a sluggish gesture toward the house and spoke invitingly.

"Varm!"

"Word number one," Taylor remarked. "Varm — come!"

They went. The going was the most difficult task with which they'd had to cope in many years. The stupendous problem of how to annihilate distance by some means even faster than light now seemed less than that of how to walk at the steady pace of half a mile per hour.

With the other in the lead they mooched around the end of the house, stopped before a pair of wooden doors hand-carved from top to bottom. Opening these, Grayface revealed a machine lurking within.

"Blazing suns!" snorted Redfern.

His exclamation was understandable. The contraption was a light framework of aluminum tubes mounted on four canvas-tired wheels and propelled by six sets of pedals. Three pairs of seats topped the assembly and provided accommodation for the source of motive power.

Drawing this out of its garage they got it onto a narrow road which had the smooth hardness of frosted glass.

Grayface got into the right-hand front seat, put an expert hand on the steering wheel. With the other hand he signed the Terrans to climb aboard.

"You take the other front seat," Gildea suggested to Redfern.

Settling themselves in the seats, they put feet on pedals which were shaped like small plates and located a couple of inches too high. Grayface raised an authoritative hand to signal readiness to boost.

The multicycle moved, gathered speed and shot down the road at a splendid twelve miles per hour while a dozen legs pumped in perfect rhythm. Reaching a small crossroad, the captain of the crew jerked a thin cord alongside his steering wheel and something in a box at the back let go with a shrill "Wee-e-eek! Wee-e-eek!"

An answering "Wee-e-eek!" came from a sideroad where a similar machine slowed for them to pass.

Falderson, puffing in a rear seat beside Simkin, said, "This will remove some of the adipose tissue from my midriff."

"I'm baffled," confessed Simkin, gazing around. "Look at those richly decorated houses and well-tended gardens. Every one a picture. You'd think people capable of building high-grade homes could do better for themselves in the matter of transport."

"With what?" asked Falderson. "You can't make pies without pastry. You can't build cars of soft metals or run them without gas. By the looks of

it they don't have electric power either." He breathed heavily, wiped his forehead, added, "I'll bet they're a thoroughly frustrated species."

"Why?"

"They're no more immortal than Mrs. Murphy's dog — but the myth of immortality was born of something. Probably they're exceptionally long-lived. If so, they've time on their hands as is suggested by the way they've dolled-up everything in sight. That in turn means time to accumulate wisdom much of which cannot be applied. Maybe they've invented half the things we've thought up, but in blueprint form only. It's as far as they can go."

"I'd like to stay a year and dig into their past," said Simkin.

"If there's another ten miles to go," informed Falderson, "I'll stay for keeps by reason of having dropped dead."

At that point the machine turned to the right, trundled across a great square in which half a dozen fountains sent feathery sprays skyward. Braking to a stop before the ornate doors of a large, important building, Grayface dismounted, led them inside, signed to them to wait outside an inner room. He entered the room, leaving them to examine the murals on the corridor walls.

Elder Citizen Karfin attended to the papers on his desk with the slow, meticulous care of the aged. He was feel-

ing the immense weight of his fourteen thousand years, knew that he was becoming a little feeble and had no more than two centuries to go. He looked up as someone opened the door and came in. His yellow eyes remained fixed upon the newcomer, steady and unwinking like those of a basking lizard.

In due time the other arrested his crawl and whispered respectfully, "Honored Elder, I am named Balaine."

"Yes, Balaine, what is it that you wish?"

"Honored Elder, at a little past hour nine a sky-ship of the pink-faced bipeds landed beyond my garden. There were five therein. I have brought them hither knowing that you would wish to meet them."

Karfin sighed and said, "They came in my extreme youth. If I remember aright, they remained for two or three orbits. I cannot be sure because my memory is fading fast."

"Yes, Honored Elder," said Balaine.

"They were so clever and had so much. I thought perhaps they found us beneath their notice." He sighed again. "Oh, well, it cannot be said that they pester us. Please show them in."

"Very well, Honored Elder." Balaine crawled away, brought them back.

The five Terrans stood before him, eyed him with the bold, far-ranging adventurousness of their kind.

And not one of them knew that this was the second time.

THE END



# THE REFERENCE LIBRARY

BY P. SCHUYLER MILLER

## LOST ADVENTURE

There's a novel on the shelves now—"Lost Island," by Graham McInnes (*World Publishing Co., Cleveland; 255 pp; \$3.50*)—which some of you won't consider science fiction. Its publishers don't, apparently: they're very prompt with Andre Norton's books, but I had to discover this for myself in the Sunday reviews.

Still, "Lost Island" has a theme with a long and honorable precedent in science fiction and fantasy—the "immortal woman" theme, with "lost people" overtones, which H. Rider Haggard typed for all time in "She." Francis Ryan, castaway meteorologist,

is washed ashore on a lost and forgotten island in the south Pacific, where Sir Francis Drake marooned three sailors in October, 1578. He finds one of them, and the man's daughter, still alive after three hundred seventy-six years—kept young and vigorous by the distillations of a mysterious volcanic vent which the ancient Polynesians knew. Ryan, too, drinks of the elixir and tries to forget his tramp of a wife in his love for the timeless Margaret Eckford . . . and then the Navy sets out to find him and the island.

Science fiction? (Drake did report

and name such an island, somewhere west of Cape Horn, though he knew nothing of fountains of youth.) Fantasy? As you like. But the publishers call it "a novel of love and adventure," and on those terms it's excellent. What's more, it raises the question: What's happened to adventure in our science fiction?

You and I, or at least the older of us, remember the thrill and sheer excitement we found in the early "Tarzan" and "John Carter" books, in the best of Haggard, and a few others. It kept Haggard alive—and does today—long after his Victorian style and values were meaningless. It was "Conan's" secret. Outside the science fiction and fantasy fields—or on their borders—it was typified in the books of John Buchan and Talbot Mundy, and, of course, in Kipling and the Conan Doyle of "Lost World." It limps along today in some of Hammond Innes' thrillers and in such dark horses as "Lost Island." But as a type of writing, and a powerful element in other fiction, *adventure* is disappearing.

J. Donald Adams, who conducts the Sunday column "Speaking of Books" in the *New York Times*, has been talking about much the same thing: the loss of the story-telling art by today's leading novelists. He suggests that the hunger for plain narrative interest may be keeping the detective story alive past its time, bolstering up the completely formalized western, and leading readers to science fiction.

I can't 'speak for westerns, but it seems to me that this same story-telling spirit—the spirit of adventure—is going out of both the mystery and science fiction. Maybe we've grown more "civilized" and sophisticated, less "juvenile" and naïve in the last generation.

The trail is easiest to follow with science fiction's elder sibling, fantasy. Not too many years ago, most people believed in the supernatural and to some degree in magic. The best weird tales, the best ghost stories were believable simply because they did deal with familiar stereotypes—the vengeful ghost, the vampire, the werewolf, the evil spirit—with which every reader was familiar, and in which he half-believed. The adventure swept him up, and with the hero—actually, as the hero—he fought against these terrible odds and won.

For it is the essence of the adventure story that we fight against natural forces, or against wicked men, and sometimes against supernatural powers, and we win through our own strength and wit.

Fantasy has kept to itself a small, soft nucleus of "intellectual" fanciers who replace belief with suspension of disbelief. They'll "go along" with a good writer, just as they'll learn the rules of a game in order to play it some evening. To many of them the old attributes and limitations of mythology have grown dull, so we have the synthetic cults like Lovecraft's and How-

ard's accepted on the same grounds as belief in Satan.

Occasionally an extra-good writer spins his web so skillfully that his synthetic game catches on with all readers, and we have an "Alice in Wonderland," a "Sword in the Stone."

The old-line detective story of Edgar Wallace and Sax Rohmer and E. Phillips Oppenheim has also disappeared and been replaced by a half dozen cultist variations: the "locked-room" puzzles of John Dickson Carr as pure intellectual exercises—which he now loads down with slapstick in the hope of catching more readers—the paranoid "suspense" tales where everyone is against the hero and he often loses, the hard-boiled sex-and-sadism school which seems to appeal to the mass readers.

The adventure element has been draining out of science fiction, too. There's enough left to strike sparks occasionally, and then we're all mightily astonished and wonder how Groff Conklin or Bleiler and Dikty or Judith Merril ever found such a story in such a place. But I'm afraid there's great danger that an initiated core of us are pushing "serious" science fiction—as Donald Adams says all serious fiction is being pushed—in the direction fantasy has gone, into the category of a delightful and stimulating intellectual frolic which—we're happy to say among ourselves—"outsiders" can't quite follow.

If they can't and don't follow, there won't be anything *to* follow—except the fan magazines that we write for ourselves, to ourselves!

The reason why adventure is missing in our fiction, I suspect, is that it's gone out of our lives. Real frontiers are pretty well gone: Everest is climbed by the equivalent of a military expedition and you "explore" the Brazilian jungle or the Canadian hinterland in a plane. There is constant pressure for more "entertainment" in the national and state scenic parks, more comfort. We can identify ourselves, to a degree, with the romantic if artificial past of the formula western or historical novel. And I don't see why, if we cultists will permit it, the larger "we" can't similarly identify with adventure stories of the future and of other worlds—in other words, with science fiction.

Why isn't it being done? Because, I think, the serious, thinking "we" don't want adventure in our lives. We want security. We can't identify with uncertainty and instability: we can only play at it.

There are plenty of good reasons for this frame of mind. We've watched what two savage wars and a series of little ones have done to us. We've seen our society almost crumble in a depression. We've felt the old, deep-rooted social values breaking up around us, found license confused with freedom. We've lost any desire to contend personally against nature, men, or

"the system" and as a result we can no longer identify ourselves with fictional heroes who do. It may be that the "intellectuals" have adopted the so-called "suspense" novel so enthusiastically (and now, it seems, the espionage yarn) because they—we can identify with a world in which every man's hand is turned against us.

We—this thinking we—are the people who buy books and magazines. The writers write, the editors edit, the publishers publish for us. And if we reject the kind of stories that other, less perturbed folk can enjoy, then sooner or later it isn't going to be profitable—which means possible—to keep on publishing for us alone.

I'm not talking about the rawest brand of space opera now. It takes a very undeveloped mind to identify with the "Superman" type of hero who need only snap his fingers to have a new and invincible weapon created out of thin air. But there's plenty of room for good, old-fashioned adventure in science fiction if we can find the writers to weave the spell for us.

It's still possible to write adventure stories about the exploration of strange planets, contacts with alien races, struggles against cosmic forces, in such a way that any reader can identify with them. It's also possible to do it so that only a mathematics professor can figure out what's going on. It's to Hal Clement's credit that with every story he's been getting further from the purely scientific puzzle and closer to

good adventure.

As Donald Adams has pointed out, the great stories that people remember have had what he calls "narrative interest" at the same time that they made their characters and their problems real and meaningful. Dickens' plots would put a modern soap-opera to shame—and for that matter, so would Shakespeare's. And I still like some of Edgar Rice Burroughs and A. Merritt and Ray Cummings as well as anything that's being written today. It won't remodel society or teach us the unified-field theory, but it's damn good reading . . .

---

**SCIENCE-FICTION THINKING MACHINES**, edited by Groff Conklin. Vanguard Press, New York. 1954. 370 pp. \$3.50

This, the biggest of the 1954 anthologies up to this writing, is also the best—and one of the editor's best, to boot. Rumor has it that the distinction of size will soon tumble, but it's going to be hard to match the Conklin skill at finding stories that haven't been done to death and assembling them into something just a little more than the sum of its parts.

There are twenty-one stories and one play—Karel Capek's classic "R.U.R."—in this definitive survey of robotdom. Two, Alan Bloch's "Men Are Different" and Fritz Leiber's TV script, "The Mechanical Bride"—which I suppose I should also have

classed as a play in my count—haven't been in print before. The others cover the leading magazines very well—ASF has six, dating as far back as Raymond Z. Gallun's "The Scarab" in 1936. Oldest: Ambrose Bierce's "Moxon's Master" from 1894 and S. Fowler Wright's "Automata" from 1929 ("R.U.R."—which established the word "robot"—was 1923), the latter unreadable as a story but ideal when used as in this book, to set the stage for types of robot development. Newest: Poul Anderson's cover-story, "Sam Hall," from this magazine and Eric Frank Russell's "Boomerang" from *Fantastic Universe*, both of September '53.

Two thirds of the book is devoted to variations on the mechanical robot theme which is oldest and best known. These metal men are what we mean, generally, by robots. Four deal with the flesh-robots we now dub "androids"—and who will tell me *and* Groff Conklin who first used the term, and when? Four more are stories of computers. And there are another two pages of recommended stories and books, in case you haven't had enough.

This is the kind of book which will get into the public libraries. Librarians have learned they can trust Conklin, where they can't trust most of their regular tip-sheets. And it will do science fiction a lot of good with the general reader. There's also a lesson in it for the fan: Groff Conklin had a reason for putting the stories in the

order he has; the book will read better if you don't skip around and take the stories that are new to you, first.

---

**BORN OF MAN AND WOMAN**, by Richard Matheson. Chamberlain Press, Philadelphia. 1954. 252 pp. \$3.00

A new publisher has moved into the science-fiction field with this collection of seventeen short stories by one of the best of the newer writers ("Born of Man and Woman" dates only from 1950). Two of the stories, "Dear Diary" and "The Traveler," are published here for the first time.

One trouble with such a book as this is that the stories are so recent that there is no sense of rediscovery, and so good that everyone else has put them into anthologies. The title story, "Lover When You're Near Me," "Witch War," "SRL Ad" are just a few that everyone will recognize.

Robert Bloch makes the Matheson quality clear in his introduction; he is a writer who gets *inside* his characters, human or unhuman, and takes the reader with him. It seems to me there's some of the same Bradbury influence in the style of some of the stories that you find in Robert Sheckley's stories also, but that Matheson is a little more on his own. Incidentally, although I never realized it until I read this collection, Matheson is in danger of making Fort College into another Miskatonic University and getting

himself trapped behind its poison-ivyed walls. There are no less than three stories about the Fort time-machine, the satiric "F—" and its sequel, "Return," and the new story, "The Traveler," in which a time-traveler witnesses the Crucifixion of Christ. The hero of "Mad House," which you may consider fantasy—it first appeared in *Fantastic*—teaches at Fort.

For the record, the collection also includes "Third From the Sun"—very like Bradbury—"Through Channels," "To Fit the Crime," "Dress of White Silk," "Full Circle," "Disappearing Act," "The Wedding"—a very neatly done little tale about superstition—and "Shipshape Home." Several fantasies; mostly borderline—for who knows whether what happens in a tortured mind is fantasy or "real"?

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**PLANETS FOR SALE**, by E. Mayne Hull.  
Frederick Fell, Inc., New York. 1954.  
192 pp. \$2.75

You may remember the "Artur Blörd" stories which appeared here about ten years ago. Blörd is the ruthless galactic financier of the Ridge Stars, who competes on all levels from skulduggery to murder with other even more ruthless Operators, a conspiracy of super-scientists, and the relic of a past reptilian race, the Skal. Of them all, only the Skal achieves much reality—I've always wished we'd seen more of him.

Stories like these—smoothly written, entertaining, with no pretensions to being the literature of the future—have been science-fiction's counterparts of the "slick" romances in the mass-circulation magazines. Specifically, they bring to mind Peter B. Kyne's "Cappy Ricks" yarns of long ago—though Blörd blasts his opponents' heads off with a careless freedom that old Cappy never enjoyed, tough as he was. But Cappy emerged as a character, and I don't think Artur Blörd does, though the ruses he uses to come out on top of an impossible situation are always entertaining.

---

**G.O.G. 666**, by John Taine. Fantasy Press, Reading. 1954. 251 pp. \$3.00

I am, personally, always glad to see another science-fiction novel from the old master, "John Taine," even though they exasperate me more and more as books. He evolves some of the trickiest truly scientific puzzles that get into print, usually in the rather neglected field of biology or biochemistry, hides his clues in an outrageous manner—which would certainly get him drummed out of the Mystery Writers of America for unfairness to customers—throws in a continual stream of sour asides on mankind and his foibles, and acts the play out with a cast of cardboard characters.

Here is a most peculiar peace-offensive launched by three representatives of a power which seems to be

Russia, though it is never specifically identified. (The first draft of the book may go back to the days when we were sending young engineers to Russia, but it's been pretty well modernized.) They come to the United States with a giant "assistant," Gog—for General Order in Genetics—on whom they want to try out an American pneumonia antitoxin—Gog's fellow workers die too fast in the concentration camps. They want to proselyte young scientists to work in their country, and invite a plant geneticist, Dr. Clive Chase, to inspect their laboratories before the volunteers leave the United States.

Since this is a Taine story—he must work out the plot twists with higher mathematics—you will know that something extraordinary happens to Gog, that the real purpose of the mission isn't unraveled until well on in the story, and that there are all sorts of other puzzles within puzzles within puzzles, like one of the little Chinese boxes you used to see in the curio shops. But it's not the best Taine—no two readers, of course, will agree on what is.

It is, with the much smoother and more credible Heinlein and Clement stories, an example of science fiction in which the science is what really counts. And this time you're more likely to see through the puzzles than in the past.

**SPIDERS' WAR**, by S. Fowler Wright.  
Abelard Press, New York. 1954.  
256 pp. \$2.75

Here's another of the unpredictable Wright epics, twisting human foibles into new patterns and achieving shock in the process. On page 7 the heroine is a captive; on page 17 she is eating the (former) wife of her captor.

Evidently this is a sequel to a book which I haven't seen, in which a magician sent Marguerite Cranleigh into the past. Now she is put into the body of Gleda, a woman of the future. Her own people, thanks to better organization, agriculture, and freedom from a swine epidemic, are somewhat better off than the pragmatic intellectuals across the river, by whom she is captured. Her captor, Lemno, is systematically condensing the record of the past into a few volumes, and his view of our own society, from the vantage of his own cannibal economy, is one of the author's wry pleasures.

Finally, however, he abandons satire for action and Lemno's starving nation attempts to invade a peninsula which has been taken over, years before, by giant spiders. Their campaign against the spiders, complicated by their hostility with Gleda's people and the uncertainty of her own position in a situation where it is often easier to become than to get breakfast, make up the rest of the story.

Sorry, it's not in Wright's best vein.

THE END



## BRASS TACKS

Dear Mr. Campbell:

I was much interested in the range of thought behind "My Willie Can Do Anything" (August ASF), approaching, as it does, an analysis of what, for lack of better designation, have often been called "powers."

Not too long ago, physicists believed that Newton's Laws Can Solve Any Physical Problem. A brash upstart named Einstein upset Sir Isaac's apple cart—pun intended. If the Principle that Logic Can Solve Any Problem is a false one; then there must be a higher Principle that will at least come closer to the goal.

I have long held that intuition is a form of ungoverned reasoning—a third

order of rationalization, so to speak. Intuition is something like an unbroken colt. Few people know how to manage it, so very few of them try. Like the fox who could not reach the grapes, they decide the subject is sour without ever trying to reach it.

Professor Rhine of Duke University has made some notable steps toward pinning down what he pleases himself to call ESP—extrasensory perception. However, Rhine seems to have fashioned his own cul-de-sac and is snuggled very comfortably in it. He has made the mistake of applying a rational approach to something that is totally irrational. You can't build a wire or wooden fence around a whirl-

## COMPUTERS &amp; ROBOTS

wind and expect it to stay restricted.

The study of that which is beyond logic will not be accomplished with dividers, sextants, or scientific measuring instruments. But I think that a groundwork can be laid by approaching it through logic itself. After all, the semantics of the subject calls for some kind of a definition, and "beyond-logic" is a logic in itself.

The simplest kind of logic is first-order deduction. There isn't a thinking mind that does not employ deduction many times a day. This is to reason from a statement of generality to a particular conclusion. All cows are vertebrates. This is a cow. Therefore, this is a vertebrate. Deduction is the work-horse that carries the burden of human thinking. And a sorry, idiotic work-horse it is, at that, for it labors just as genuinely on a false premise as it does on one that is accurate. For instance: All thieves have bushy hair. Joe has bushy hair. Therefore, Joe is a thief. Now, turn it around this way: Thieves sometimes have bushy hair. Joe has bushy hair. Therefore, Joe is sometimes a thief. The conclusion is always logical. It is simply irrational.

Induction, or second-order rationalization, is a little more complex in its behavior, hence not many have much use for it in daily living. This is to accept a number of observable phenomena and incorporate them into a general statement explaining the whole. A number of civilians (individual parts) are "inducted" to form

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the army (the generality). In this manner, laws of physics are induced or inferred from observable phenomena. Newton observed that all things fall to earth. Therefore, he inferred, there is some force that pulls all objects to the ground, the same being gravity. Einstein has been bold enough to quarrel with that concept. Like the elephant who never forgets but sometimes can't remember, logic is never wrong, but sometimes it isn't right. We progress from logic to logic, *logica ad logicam*, which always agrees with itself but never with the other fellow.

It is rather startling to learn that all rationalizing revolves around these two forms of logic. Why only two? Is mind not only finite, but actually circumscribed within the range of two forms of thinking? I hold that it is not.

The logical approach would indicate other orders of rationalization beyond those we consciously use—third order, fourth order, et cetera, perhaps on to infinite order.

Consider that we have conscious control of the first two orders of reasoning. We deduce and induce what and as we please. But how do you "exude"? Exduction might be to lead out from observable and *non-observable* phenomena to a rational conclusion. How do you incorporate non-observable phenomena into the matrix of rationalization? If such are available, then they must be observable in some manner not known to the ordinary senses. Logic seems to infer,

then, that there is no such thing as non-observable phenomena. Our conclusion is, then, that the human mind is omniscient.

To be omniscient and to know everything are incompatible concepts. Omniscient is only Latin for knowing everything, but if we are to use it as a concept, we must restrict its connotation to the point that it does not imply "ready knowledge"—i.e., conscious knowledge. We may, therefore, consciously know some things; but all other things are known only below the threshold of consciousness.

It is rank foolishness to place a bar across the middle of the mind and say that everything above is conscious and everything below is subconscious. A radio receiver treats simultaneously with electric currents and with radio-frequency currents. No engineer is likely to confuse the one with the other. It appears that a great deal more is known about the function of radio than about the function of the human mind.

Let us, for example, say that we use electric current for conscious thought. (This as illustration only, having nothing to do with the electroencephalograph). Then the rf circuit is something else again. What does it do? How do we use it? More cogent still—where does it come from?

We try to explain the unknown in the terms of the known, which leads to misunderstanding. However, *something* analogous to the two types of

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current in the radio receiving set is also at work in the human organism. You can consciously eat a potato, but can you *consciously* digest it? You can consciously exercise until you wear yourself out, but can you *consciously* restore damaged cells or put red corpuscles in the blood? "Which of you by taking thought can add one cubit to his stature?"

To speak of "automatism" in respect to involuntary bodily functions is to speak gibberish. Nothing operates "by itself," but only in accordance with a principle. How many principles must function to cause your dinner to develop into bones, blood and muscle instead of a belly-ache?

Yet, it has been demonstrated time and again that functions over which we nominally have no control, have been consciously controlled. "Stimulated," I believe, is the term used by the adherents of the mechanical reflex concept. Psychosomatic imbalances and "faith healings" are opposite examples of the same thing. The patient does not commonly know either how he made himself sick or how he healed himself. Therefore, it seems patent that he did not consciously accomplish either.

If you tell Hank to carry in a sack of spuds from the root cellar, you have consciously accomplished an action—assuming that Hank carries the spuds in. None the less, *you* didn't carry the

spuds.

We may infer, then, a dual essence of the functioning part of the organism. The self, which is the conscious part, rides around like a driver in a car, looking out through the eyes, hearing through the ears, observing tactile phenomena with the nerve endings. Life, which is the part of the organism over which we have little or no conscious control, is the other part. The self is the discriminating side of the partnership. The life-essence is indiscriminate; it lacks rationalization as we understand it, for it is a form of rationalization unto itself. It is common with all other living things. It knows all things without the need of reasoning them out. It has to. A lifetime of study would not be sufficient to teach the kind of control necessary to keep billions of cells in order, to keep thousands of processes functioning simultaneously.

To achieve third-order rationalization, which is controlled intuition, some sort of control must be developed that will make the dual essence function as a unit. Self is the boss of the project; the life-essence the handy helper. If the helper grows careless and lets cancerous cells develop, they will continue to develop, because the helper doesn't have the kind of discrimination that will determine good from bad. One thing is as good as another to the life-essence, so long as it lives. If you could tell your partner to rout a cancerous growth like you

would tell the hired man to weed the garden patch, you would have established some kind of control.

How are you going to communicate the command? Most people don't, can't, or won't. They are dropping dead daily with cancer, heart disease, pulmonary afflictions—any number of things. We hear often about "miraculous" recoveries from conditions indicating certain death. Somehow, the command was got across.

Perhaps it is a matter of evolution. The race has not evolved far enough to assume complete, conscious control over the organism. Man has never been able to control himself, so how can he expect to control that which stems from himself—his society? A few slightly mutated specimens seem to exist today—in whom control is a demonstrated thing. Unfortunately, such an ability for control does not seem necessarily concomitant with statesmanship or political activity—nor even with a knack for business. It appears, perhaps, that both politics and business are doomed for the scrap heap once man, as a race, does evolve into the kind of control I am talking about.

Your suggestion of study would suggest that the evolution of control could be speeded. I think it could. I think physical factors are concerned, of an order of physics beyond what we are accustomed to consider physical.

The desert of the Unknown is large . . . who would not hesitate, deciding

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*"Hesitate" seems to be an understatement for "scared blue—with polka-dots"!*

Dear Mr. Campbell:

Mr. Pinschur's question is a very interesting one. Unfortunately the person who was asking the question could not have been operating in this society.

The question was: "Why are you doing that?" To a member of our society, the question implies that he is doing something wrong or something that is unusual in some respect. If he feels, as most people do, that his actions are neither unusual nor illegal, he will not become angry, embarrassed, upset, or anything else. In fact he will probably reply with a counterquestion: "Doing what?" or "What?"

As far as I can tell, Mr. Pinschur has made no provision for reaction to that counterquestion. Does the ques-

tioner say nothing and just wander off? Does he mumble "Never mind" or "Nothing," and walk rapidly away? Does he select one of the many things the person may be doing and specify? (For example, if he questions a man reading a book, does he counter-reply, "Reading a book" or "Thinking" or "Sitting at a table" or "Breathing"?) Does he repeat the question, implying that the person is (still) doing something unusual? Or does he reply—with a tone and look of incredulity—"Don't you know?"

Although I would like very much to destroy civilization, I prefer not to start until I have a foolproof method. In other words, I would like to know how I should reply to "Doing What?"

I would appreciate your immediate consideration of this pressing problem.  
—Ernest Schlesinger, 6638 West Sixth Street, Los Angeles 48, California.

*The proper reaction to the counter-question is "Don't you know what you're doing?"*

Dear Mr. Campbell:

Re the article "Achilles and the Tortoise":

Presumably Mr. Gunther is a mathematician; I am not, but I do have some engineering training. Since everyone seems willing to admit that the son of Thetis did overtake and pass the tortoise, I strongly suspect that the paradox is definitive rather than mathematical. In other words, Zeno & Co., in endeavoring to be cute, have deliberately dragged the concept of infinity into a problem in which it does not belong. (In fact, I doubt that in the final analysis the idea of infinity properly belongs in any real, physical problem, although it is admittedly a convenient tool for solving certain problems.)

Here seems to me to be the crux of the matter; for what earthly reason do we need to consider the diminishing interval of space between our runners? Whether space and time are continuous in nature, or whether one or both have a quantatized structure, we can measure them only in quantatized units; this is especially important applied to time. In the period of time during which the tortoise can travel a certain distance, Achilles will be able to run a greater distance. If these identical time intervals are concurrent, and of sufficient duration, Achilles will have passed the slower reptile before they are concluded. However, since we can measure space-time only in quantatized units, we can never

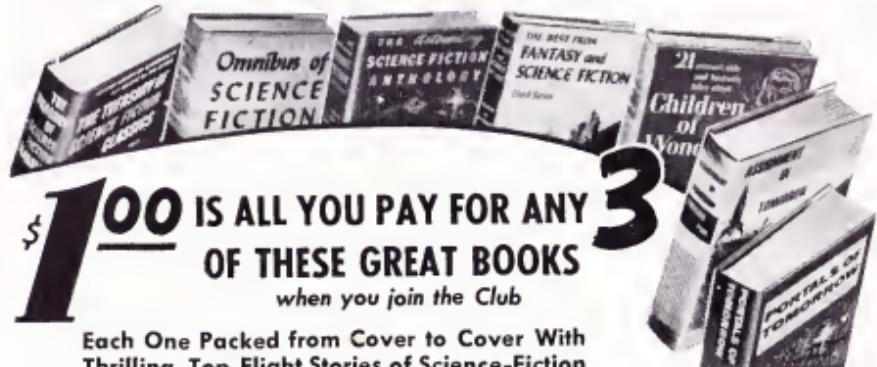
say, "At this particular time, and at this particular spatial point, Achilles passed the tortoise." We can only define the space-time interval in which the passing took place: "At the beginning of this time unit, Achilles was trailing; at its conclusion, he was leading."

Furthermore, since both of our racers are moving, we cannot properly speak of their "occupying" positions, but only of their passing through these positions, and Achilles, the faster runner, will certainly pass a larger number of these positions in a given time interval than will the tortoise.

Frankly, I question that this is a genuine paradox at all. It appears to me to be a riddle of the familiar type in which the statement of the problem contains extraneous information of a type which will confuse the listener. Won't a true paradox have to be semantic in nature? A fact, much less a physical action, cannot be self-contradictory.—Ronn Schleifer, 211 Blanche Street, Houghton, Michigan.

*A true paradox must be logical in nature—for the construction of paradoxes is, in essence, an effort to erect an "experimentum crucis" to see if the logic system can actually stand up. Zeno was correct; the Greek yes-no logic system will not stand up to that type of problem, though it will handle many other types. Note that the Greek yes-no type logic won't stand up in a relativistic universe, either.*

—Continued from Back Cover



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